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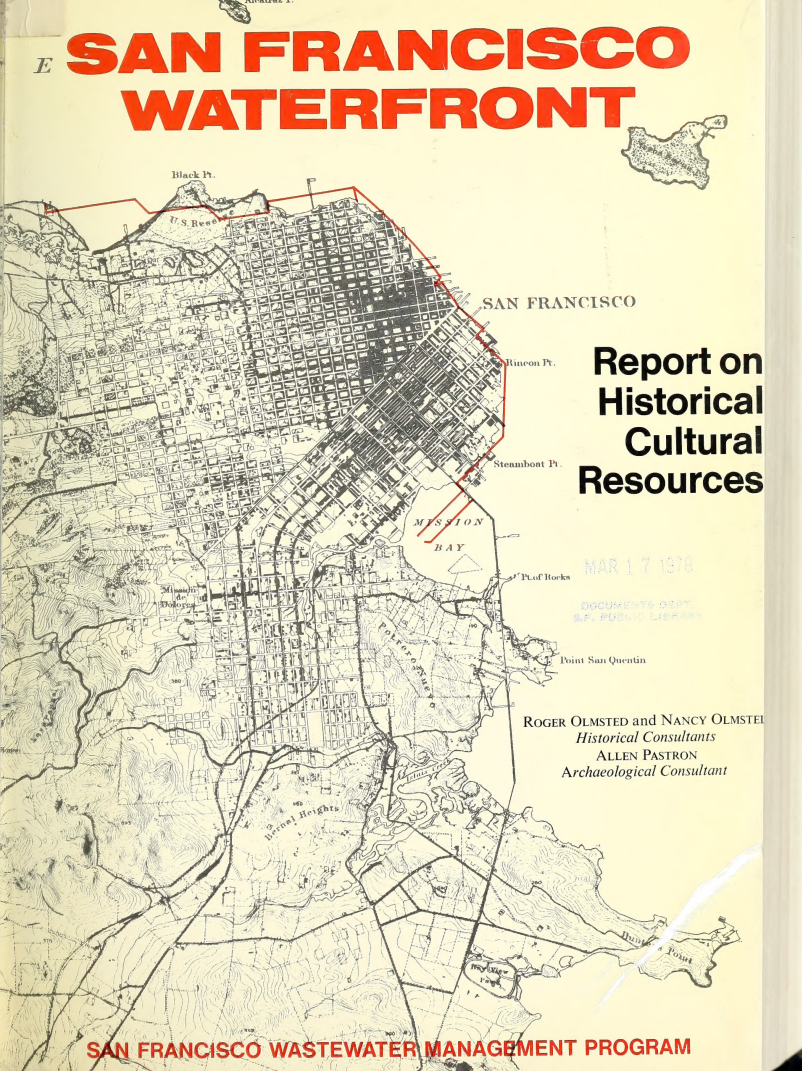

Report on Historical Cultural Resources

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SAN FRANCISCO WATERFRONT

Report on Historical Cultural Resources
for the
North Shore and Channel Outfalls Consolidation Projects

Prepared for the
San Francisco Wastewater Management Program

Roger R. Olmsted
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San Francisco
December, 1977

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Olmsted, Roger R.,
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San Francisco waterfront
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1977.

Cover and Maps by John Beyer
Type by Word Processing, Ignacio
Printed by Techni-Graphics, San Francisco

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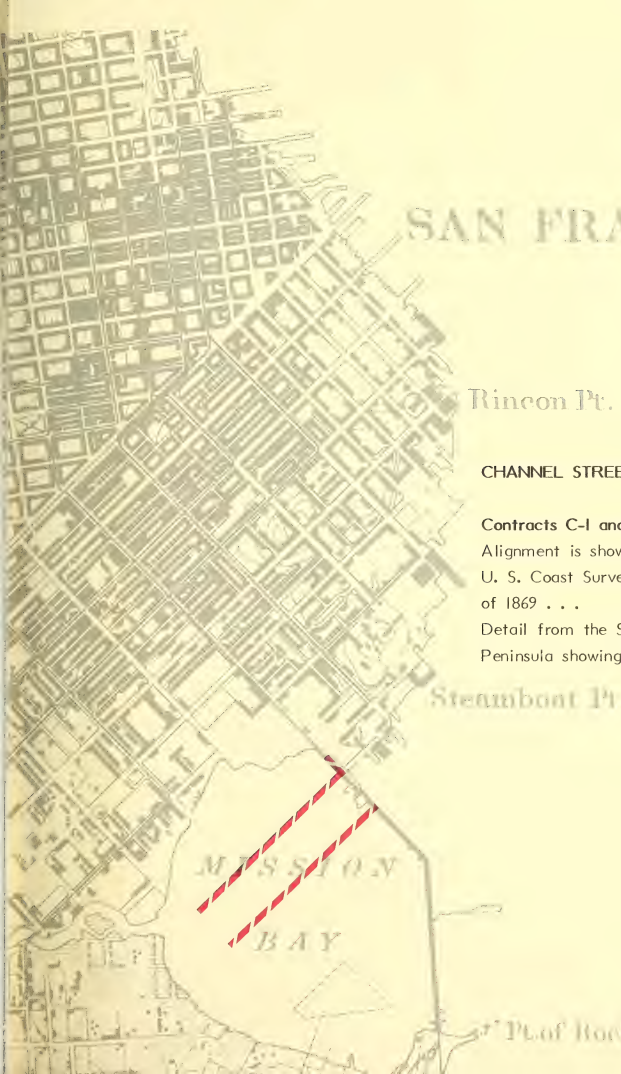
the Channel Street and King Street areas, it was essential to the C-3 and N-3 contract alignments that cross the historic Yerba Buena Cove, around which the town developed and which was the site of the first intensive maritime activity. Therefore, extensive background information relative to the early development of the city appears with the C-3 (South Embarcadero) section of this report.

With regard to eliminating redundancy, the general description of the scope and guidelines of the study has been consolidated into the introductory material for the C-1/C-4 (Channel Street) section. Description of monitoring and mitigation standards that are common to all contract areas are consolidated into the conclusions and recommendations that appear in the C-2 (King Street) section. However, conclusions and recommendations specific to each of the several contract areas will be found at the end of each geographical section. Each section has its own contents list of maps and plates, and these references are keyed to that section alone. The bibliography has been consolidated at the end of the volume in the interest of avoiding undue repetition of a substantial number of the sources. Only cited reference sources appear in the bibliography.



CHANNEL STREET AREA

Contracts C-1 and C-4
Alignment is shown on
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Detail from the San Francisco
Peninsula showing Mission Bay.

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SCOPE, OBJECTIVE, AND METHOD . . .

Scope of the Report: Under the "Guidelines for Compliance with the National Historic Preservation Act" furnished by the State Water Resources Control Board (**Bulletin** of February 10, 1976) and specific guidelines for the preparation of reports on the potential cultural impact of the North Shore and Channel Outfalls Consolidation Project of the City and County of San Francisco produced by the National Park Service, it is the primary task of the following report to "locate, identify, and document through archival search specific cultural resources that once existed and for which some evidence of physical remains may still exist," within the areas of the North Shore and Channel Outfalls Consolidation Project.

Through the use of historical and archaeological research methodology this report seeks to identify: (1) areas in which no specific cultural remains can be identified, and that will require no continuous on-site monitoring during construction, and (2) specific areas in which physical remains of specific cultural resources may exist, and that therefore should be subject to preliminary archaeological testing procedures in order to determine the type of monitoring or mitigation procedures that may be appropriate to the letter or intent of current public law, Executive Order, and the physical nature of potential remains.

The report includes archaeological analysis of archival data in the form of specific recommendations for field testing before or during the course of construction, specific monitoring recommedations, and a plan

for handling, analysis, storage, and ultimate disposition of artifacts recovered during either testing or construction activity.

Objective and Directions of the Study: As the archival materials relating to the historical period of activity in the North Shore and Channel Outfalls Consolidation Project are extremely extensive, it is the objective of this study to identify the presence or absence of historical cultural resources with a degree of precision that might not be obtainable in a less urbanized setting or in places of less recent development. By means of such a historic survey, preliminary field testing techniques can be undertaken in specific locations with a higher degree of probability of establishing or denying the existence of a specific cultural resource than would be the case in an area in which extensive archival collections did not exist.

In accordance with guidelines of the National Park Service regarding this area, research priority has been given to:

a. Areas known to have been above mean high tide throughout or during a substantial part of the historic period.

b. Areas within 200 feet of known or suspected structures, features, or objects.

c. Areas in which the earliest evidence of historic occupation or use is most likely. In priority order these should be:

   1. Spanish period
   2. Gold Rush era to 1865
   3. 1866-1906
   4. Post-Earthquake to 1930
   5. 1930 to present

The actual organization of data in this report will vary from the guideline model to the degree that periods covered in separate chapters reflect the realities of historic development in specific areas. Thus, the "gold rush period" may in different cases be considered as a shorter or longer era, depending upon the manner in which given contract areas developed in response to the gigantic impetus of the gold rush. Generally speaking, the concept of a California "gold rush era to 1865" is not appropriate. Depending upon the area, we have usually confined the gold rush to its more proper limits, for there is generally a distinct gap in the nature of development between the gold rush peak of the mid-1850's

(followed by an economic collapse) and what we have styled "the city-building period" of the end of the 1850's through the 1860's. This period, when San Francisco was subject to the continuing in-migration of permanent residents that distinguished it from the fluctuating migratory character of the gold rush itself, we do not cut off so specifically as the gold rush era--but we trust that the distinctions between eras will appear logical within the context of given contract areas.

In all cases, the purpose of presenting archival historical material is to indicate not only the probability (or not) of encountering cultural remains that may add to our knowledge, but to at least sketch the dimensions of the archival resources as they relate to our knowledge of the culture of the several areas. A two fold objective is here involved: 1) to provide a framework within which archaeological finds may be interpreted, at least on an interim or field level; 2) to indicate the amount of archival material descriptive of the culture and activities of the entire alignment area.

Clearly it is of the highest historical importance to acquire archaeological information that adds greatly to other historical sources. In the case that we have no archival sources--as in prehistoric cultures--the archaeological interpretation may be of primary importance and the expense of the methodology essential to increasing our understanding of the development of cultures is entirely justifiable. But obviously the cost-effectiveness of archaeological techniques declines to the extent that the information gained is redundant. To give an example relative to the first excavation associated with the C-1 area (a pump station not part of that contract or involved in this report), we do not need to know that English stoneware ale and beer bottles were associated with the cultural activities of the men who built steam schooners at Hay's shipyard in 1886. We already know that, from a general knowledge of imports during that period, the habits of shipwrights, and even direct interviews conducted thirty years ago with shipwrights whose experience reached back to the 1880's. The recovery of these bottles tells us only that some men at Hay's yard drank what we know they drank. The authors of this report observed the recovery of several of these bottles. It was professionally

gratifying to see materials uncovered that we would have expected to find. But the find did not add to our knowledge, nor were the finds museum pieces, however they might currently trade in the enthusiastic bottle-collector market.

Tests conducted in the C-1 and C-4 areas since the presentation of the reports in their initial form have discovered what might be expected to be discovered as the result of archival study. (Pastron 1977: Passim) The point at hand is this: it is of high importance that cultural deposits that may add greatly to our historical and anthropological knowledge be subjected to close scholarly examination and preserved if such action is relevant to the finds. Such procedures are in accordance with the spirit of recent legislation and executive orders and department guidelines developed from such legislation. Alertness to the possibility of discoveries that may add to our knowledge is partly a function of archival study of what may be there. At the same time, we must be aware of how much we do know and can know from archival materials, so that we do not violate the spirit of Congressional legislation by using vastly expensive techniques to recover in the field information that may be recovered at small expense in the library. Thus, this report deals broadly with the history and cultural activities of the North Shore and Channel Outfalls sewer alignment areas, both to assist in quickly determining the probable provenance of archaeological finds and to indicate the quantitative and qualitative levels of alternative information available.

Of course, the overriding objective is always the identification of potential cultural resources, whatever a current view may be of their importance. For this reason, a great deal of specific attention is devoted to the physical possibility of cultural remains from the several periods, even when likelihood of such remains is low or their importance may seem to be low. The guiding principle in this archival study, and in the field testing program that is currently underway in accordance with the recommendations drawn from initial study, is that there is always the possibility of the unexpected--but that to the extent that we do preliminary archival investigation we can suggest the probable, place limits on uncertainty, and provide some mechanism by which cultural resources may

be assessed in perspective and preserved as required by common sense, scholarly interest, and public law.

Method: The archival research has been conducted in accordance with the priorities established in the guidelines of the National Park Service. The first step and the basis of all subsequent research was the collection and analysis of the most accurate historic maps of the area. Most of these maps are reproduced in the body of this report in the interests of presenting precise historical information in its original form to supplement the enlarged and simplified overlays that accompany the report. It has been the approach in this study to place the highest credence in precise visual information, which in our experience is less subject to the selective judgment or misinterpretation frequently encountered in written records.

As is the case with the class of maps relied upon, photographs, when available, provide another source of unselective information, in that the camera records everything within its range, whatever the intention of the photographer may have been in taking the view. To some extent, we have used the less reliable visual source of birdseye views, some of which are included in this report.

In the case of written sources, we have relied upon primary materials for the most part, and used secondary sources to the degree that their accuracy correlates with our general experience in the area of San Francisco history. Discrepancies in sources (usually secondary) have been followed by research into primary materials. For example, when the usually reliable J. S. Hittell, in his **History of San Francisco** made the slip of completing Long Bridge in 1864 and then commencing it in 1865, research through city directory chronologies revealed that the first piling was driven on February 19, 1865. To continue the Hittell case as relative to historical methodology, his huge volume titled **Commerce and Industries of the Pacific Coast**, which would ordinarily be considered a primary source, was traced back to the scrapbooks that he gave to H. H. Bancroft and that contain even more detailed information in the form of clippings he had made from the contemporary press. Written sources have in all cases been analyzed with regard to the historic maps and photographs

available, for all too often written references have been found to be inprecise as to locations. In The process of either locating a written reference or in analyzing a visual reference it is often the case that both become clearer. By such methods the relevance of archival reference to the precise alignment of the sewer construction is established.

San Francisco's south waterfront has not previously been subject to the scrutiny of researchers so much as its north waterfront area. This report constitutes the first attempt to bring together a coherent view of the variety of existing archival material, ranging from the San Francisco Municipal reports with their detailed lists of contracts let for street improvements, through the street-by-street and wharf-by-wharf descriptions of the south of Market area in the 1870's and '80's, as recalled by Roxburg in the 1920's, to the present-day recollections of Captain Fred Klebingat of the waterfront at the turn of the century. The extensive photographic archives of the San Francisco Maritime Museum have made possible the visual analysis of the Steamboat Point area with the early shipbuilding activities. Thus it has been possible to gain a new understanding of the south waterfront of San Francisco from its historic beginnings through the years of cultural and technological changes.

The results of several intensive research projects undertaken by the San Francisco Maritime Museum over more than a decade have provided materials that could not otherwise have been collected in anywhere near the time available for the preparation of this report. In particular, coherent collections of material relating to gold rush ships, storeships, and hulks and archival research into San Francisco's wharves and warehouses from 1849 to 1906 and after, have vastly expanded and corrected earlier work on the subjects. Specific credit for the high quality of these research efforts goes to Albert Harmon (until his death Librarian of the San Francisco Maritime Museum), Karl Kortum (Director), Harlan Soeten (Curator), and Jean Kortum (who has continued earlier research on wharves and warehouses). The principal author of this report, Roger Olmsted, has from time to time in the past assisted in some of this research. Material stemming from Maritime Museum resources has been for this report subjected to further research appropriate to the historical

and archaeological requirements of the problem at hand and has been analyzed closely with regard to the possibility of cultural impact resulting from the sewer construction.

Scope of the Construction Excavation: The sewer along the C1 and C-4 alignments involves a slurry wall and open-cut excavation almost entirely 11 feet in width between the walls on the C-4 alignment (center line approximately 80 feet south of the bulkhead line of Channel Street), and 17.5 feet wide between the walls on the C-1 alignment along Berry Street and Fourth Street (center line approximately 50 feet south of the pavement line of the north side of Berry Street and approximately 16 feet east of the west pavement line of Fourth Street).

The depth of the invert culvert (about one foot to two feet above the underside of the concrete sewer) ranges from approximately 19 feet to approximately 11 feet on the C-4 alignment, and from approximately 29 feet to approximately 34 feet on the C-1 Alignment.

Attention is called to the accompanying 200'-to-the-inch overlays that show the exact alignment in plan. The C-1 alignment extends from a point 50 feet east of the east pavement line of Fourth Street on King Street to the intersection of Fourth and King, down the west side of Fourth Street to the intersection of Fourth and Berry Streets and down Berry Street (slightly off-centered to the south side of the center line of the street) to a point 72.5 feet east of the pavement line of Seventh Street.

The C-4 alignment extends from a point approximately 80 feet east of the pavement line of Seventh Street to approximately the northwest bulkhead line of Channel Street, southeastward across Channel Street, then due eastward (diagonally to all the other portions of these alignments) to a point 280 feet east of the pavement line of Seventh Street, from whence it proceeds parallel to Channel Street to a point approximately midway between the pavement line and center line of Fourth Street.

Attention is called to the soil profile prepared by Woodward-Clyde, and the accompanying description as relative to potential archaeological values, contained in the Appendix.

The archival research on the C-1 and C-4 contract areas has been integrated with and supported by the Woodward-Clyde archaeological analysis possible from the data obtained from 22 test borings that cover the area transected by the alignment. These borings, while not carried out for the specific purposes of this study, furnish data about the nature of the fill and its depth, the possibility of the existence of cultural debris, and the depth and composition of soil strata. In effect the archaeological analysis of existing boring data confirms the validity of the archival research insofar as borings of this type can do so.

THE CHANNEL STREET AREA: SUMMARY . . . Historic Cultural Resources

Contract Areas: The Channel Street historic survey area covers the Channel Outfalls Consolidation Projection alignment on Fourth Street from King to Berry and Berry Street from Fourth to Seventh (Contract C-1) and the south side of Channel Street from Seventh to Fourth (Contract C-4).

Prehistoric, Spanish, Mexican, and Early American Periods (to 1852): The entire contract area was covered by the waters of Mission Bay, only the short block on Fourth Street being close to land. The bay was navigable by boats larger than skiffs or Indian tule canoes only at the higher stages of the tide. There is little possibility of the existence of any cultural materials of these periods of any quantity or importance to historians or archaeologists, nor is it likely that any museum-quality artifact or otherwise significant specimen could be found.

The City-building Period (1852-1865): Boatbuilding and shipbuilding activity began at Steamboat Point in the early 1850's, and it is possible that debris related to such operation (dating from the late 1850's and early '60's) exists along the Fourth Street block. It is unlikely that the discovery of associated artifacts would add to historical or archaeological knowledge beyond identifying with more exactness the location of operations of such builders as Patrick Henry Tiernan. Long Bridge, completed at the end of this period, followed the line of Fourth Street, and there are no doubt

pilings and debris associated with the businesses of boatmen and other minor waterfront users of the time. Again, the import of likely finds from the standpoint of historical archaeology is almost certain to be slight or nil. However, Fourth Street, between King and Berry, is the only location within the contract areas where there is apt to be any substantial quantity of any sort of cultural material dating earlier than the early 1870's.

Late Nineteenth Century (1866-1890's): The "early" development of Berry Street and Channel Street along the alignment is rather late with regard to the possibility of archaeological evidence adding to comprehension of our cultural history. "Channel Creek" developed in the 1880's into a heavily used landing for the bulk cargoes (hay, lumber, brick, and the like) of comparatively small bay and coastal carriers (sailing scows, coastal schooners, and steam schooners), and remained so down through the decline of such maritime commerce after the 1920's. The range of industries along Berry Street (planing mills to vinegar works) appears on the appended Sanborn block maps. To the waterfront historian or historical archaeologist the shipyards of Beaton & Boole and Alexander Hay (Berry to Channel between Sixth and Seventh) during the mid-'80's are of the greatest interest, for here were built most of the early "steam schooners" that revolutionized the lumber trade.

Yet however interesting to local historians or historical archaeologists these businesses may be, they date from a period that has left us mountains of cultural hardware. For instance, vessels of the type that plied the Channel lie at the Hyde Street Pier today, substantially outfitted with appropriate gear and contemporary artifacts, and their methods of operation have been documented in detailed interviews with participants in the activity of the 1890's and after.

The most notable of the manufacturies that may have left debris of high interest to collectors was the San Francisco and Pacific Glass Works, fronting on King between Fourth and Fifth and backing on Berry Street. The establishment occupied this site between 1871 and 1886, and during its earlier years it is possible that the as yet unfilled Berry Street

may have been used at one time or another as a convenient dump.

We have not as yet seen any satisfactory evidence as to the sources of fill along Berry Street. The block between Fourth and Fifth Streets appears to have been filled by 1877. The extension of the Central Pacific-Southern Pacific activities into the area resulted in fill west of King Street starting in 1871-72, and subsequent Southern Pacific filling in the Channel Street area occurred down through the post-earthquake period. (Langley, 1872; Dow, 1973: 127ff.) Borings made for soil test purposes show evidence of wood, brick, gravel, and shells in the fill. (Woodward-Clyde: July, 1976) A soil profile prepared by Woodward-Clyde appears in an appendix to this section of the report.

Modern Period (mid-1890's-1920): With the completion of fill on Berry Street and the Channel Street southside roadway, we would expect to find little cultural debris associated with the street-side businesses, even though these years represented the peak of activity with regard to the shipping business in the Channel itself. Yards handling bulk cargoes--brick, grain, hay, and, above all, lumber--characterized the use of the land along both sides of Channel Creek. A detailed account of these businesses from 1887 through 1919 will be found below.

Conclusions: The sewer alignment appears to follow exactly the line of Long Bridge on Fourth Street between King and Berry, and the C-4 alignment again intersects Long Bridge at Fourth and Channel. As Long Bridge was built on pilings in 1865, and as structures were built on piles right alongside the bridge, we may expect to find remains of the bridge pilings, together with artifacts that may have been lost over or through the bridge or structures built thereon or deliberately thrown into the shallows as a method of discard or fill. For example, the dump from a saloon or eating place associated with the recreational boating and fishing that characterized Long Bridge in the late 1860's may be transected by the alignment. The "backyard" of the glass works (see main text) on Berry near Fourth Street may contain dumps of very great interest to bottle collectors, but given the size of the potential dumping area behind

the King Street frontage, it is probable that materials are scattered extensively rather than collected intensively.

PREHISTORIC PERIOD . . . 2000 B.C. - 1776 A.D.

As is the case with many of the heavily urbanized regions of the United States, the prehistory of San Francisco is not as precisely understood as most archaeologists would desire. Yet, a number of important and revealing sites in and around San Francisco have been systematically excavated during the last few decades by professional archaeologists who have carefully analyzed their data and published the results of their research. As a result, a basic outline of human activity in the San Francisco Bay Area prior to the first arrival of Europeans has been pieced together from the artifactual remains that the region's first inhabitants made and used in the course of their day-to-day lives.

Judging from the archaeological evidence, most archaeologists agree that the earliest traces of human habitation in the San Francisco Bay Area date to around 2000 B.C. A number of sites are known from this early period, called the Early Bay Horizon; some have yielded reliable carbon 14 dates. In their recent publication describing the archaeology of a shell mound that they excavated in West Berkeley on the east shore of the bay, Wallace and Lathrap provide the most comprehensive and up-to-date summary of the region's prehistoric cultural history and chronology. (Wallace & Lathrap, 1975: 75)

Native American peoples lived in and around San Francisco continuously between their earliest arrival in the area around 2000 B.C. and the appearance of Europeans in the last decades of the eighteenth century. The cultures of the aborigines in the San Francisco Bay Area

were basically similar to those of most Native Californians. These peoples made their living by hunting and collecting wild foodstuffs and did not farm or keep domestic animals. In the San Francisco Bay region, shellfish provided one of the more reliable and predictable sources of food. In addition, the Indians collected wild plants and fished and hunted numerous species of land animals. They lived in small, mobile groups and changed their campsites frequently. Mobility was essential to their survival, since the locations of available food resources were unpredictable and apt to change dramatically from one year to the next or from season to season. Since these people were often on the move, their material culture was of necessity simple. They owned few possessions--only such items as could be conveniently transported from one spot to another with ease. (For additional discussion, see Kroeber, 1967, and Suggs, 1969.)

The entire area encompassed by the C-1 and C-4 contract alignments of the Channel Outfalls project was covered by the waters of Mission Bay during the late prehistoric period. Further, there is no climatic or geological evidence to suggest that at any time during the last 2000 years did sea levels fluctuate to the point where any portions of these contract alignments could have been consistently situated above the level of high tide and therefore even potentially suitable for human habitation. The Coast Survey chart of 1857 (see Map 2) indicates that only during periods of extreme low tide were mud flats and tide pools exposed to the open air by lowering sea levels for brief periods. However, there never were stretches of dry, solid ground exposed for any length of time upon which human beings could have even traveled by foot in safety, let alone have established any kind of settlement or encampment.

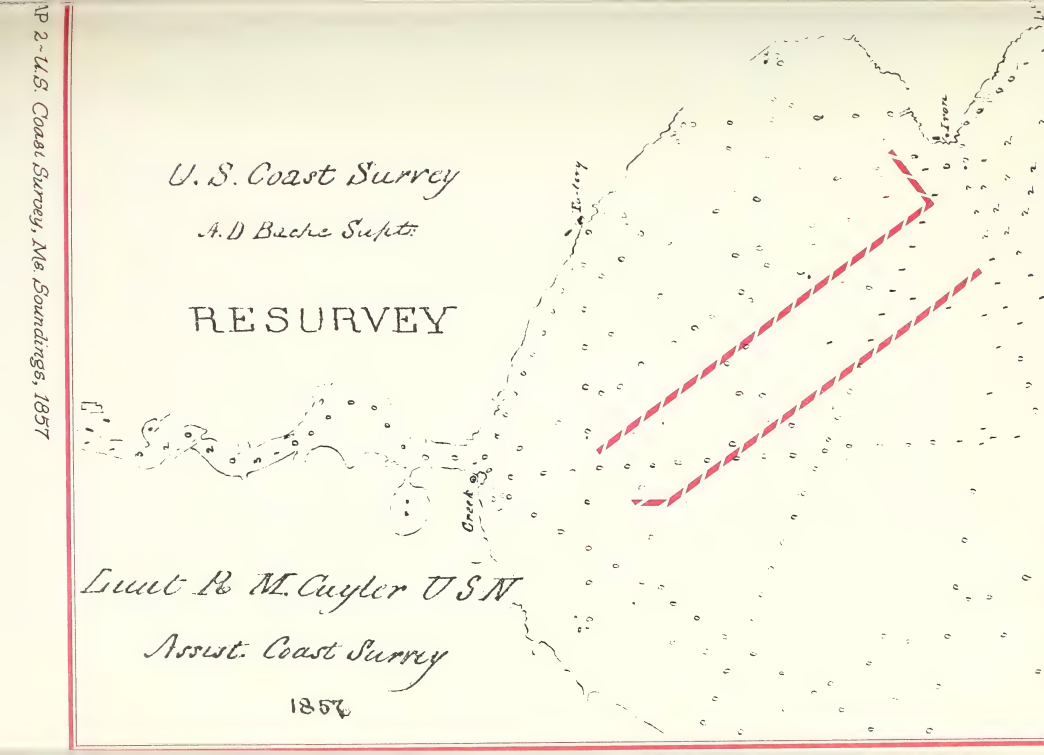
While it is likely that prehistoric man traversed portions of the contract alignment in their light watercraft, there is virtually no possibility that any cultural evidence remains to tell of their passage. As no settlements existed along the route of the alignment, the only prehistoric artifacts that might be encountered would have to have been deposited accidentally or fortuitously. And even in this case, the action of the tides and southeasterly gales that swept over the area every winter (before the construction of Long Bridge in the middle of the nineteenth century,

Mission Bay was directly exposed to these often severe winter storms) would virtually preclude the systematic deposition or accumulation of even those few artifacts that might have found their way into the path of the present contract alignments by accident.

In short, it is extremely unlikely that any artifacts from the prehistoric period will be encountered along the routes of the C-1 and C-4 contract alignments. If any finds are made from this period, it is certain that they will be single accidental occurrences. No concentrations of prehistoric material are likely to be found and therefore, there will be no impact upon prehistoric cultural resources by the construction of the C-1 and C-4 contract alignments of the Channel Outfalls sewer project.

AP 1- U.S. Coast Survey, 1853

MAP 2 - U.S. Coast Survey, Me. Soundings, 1857



SPANISH, MEXICAN, AND EARLY AMERICAN PERIODS . . . 1776-1852

The Channel Creek historic survey area, reaching from Fourth Street to Seventh Street between Berry Street and Channel Street, stretches across the former Mission Bay on a northeast-southwest axis from the vicinity of the original locations of Steamboat Point and the mouth of Mission Creek. The Channel Outfalls Consolidation Project contract areas known as C-1 and C-4 do not at any point reach to the original shoreline of Mission Bay, which cannot, during the historic period, have been of lesser extent than that shown on the Coast Survey chart of 1853. (See Map 1) As a result, there is no reason in this connection to discuss the features or implications of earlier San Francisco Bay maps and charts. As shown by the 1853 chart, there were at the end of this period only three structures on the shore of Steamboat Point anywhere near the line of Fourth Street.

The survey information for this chart dates from February, 1852, or earlier. We do not know the origin of the name "Steamboat Point," but the obvious presumption is that one or more of the several knocked-down river steamers sent out to San Francisco in 1849 and immediately after were assembled not at Happy Valley on the south-of-Market shore but out at Tichenor's Marine Railway (installed in 1851) at the foot of Second Street or elsewhere around the foot of Third Street. There was substantial shipbuilding in this area subsequently.

The point here is that there is no site within 200 feet of the contract areas where one could expect to find cultural materials deposited prior to the extension of shipways to or toward Fourth Street at a later

date. Thus, any cultural materials dating from the Spanish, Mexican, or Gold Rush periods that exist **in situ** would have to be artifacts lost from a boat. "Boat" is used precisely, for no place in the area was during this period navigable by any seagoing vessel; indeed, a small, shallow-draft craft such as the later-day oyster sloops that worked the South Bay is the largest type of vessel that could have maneuvered comfortably in Mission Bay—and then only at middling and higher stages of the tide. (See Map 2)

In this connection, the 1835 inventory of the Mission Dolores included among the more valuable holdings "A launch and boat." (Bancroft 1888: v. I, 888, 714) These craft may have worked out of Mission Creek, except at lowest tides. This is assuming that the boats ever had been serviceable for any length of time—a not totally likely assumption, given the general record of Spanish and Mexican maritime capabilities in the local area. It should be added that the quite serviceable tule canoes of the local Indians no doubt navigated Mission Bay and its tributaries whenever purpose or impulse guided the paddlers.

THE CITY-BUILDING PERIOD . . . 1852-1865

Shipbuilding: As early as September 18, 1849, a knocked-down sternwheel steamboat from a Philadelphia yard arrived at San Francsico aboard the Pacific Mail Steamer **Oregon**, the purpose of the venture being to cash in on the establishment of steamer service to Stockton, commercial headquarters for the Southern Mines. Domingo Marcucci—who had come out with the vessel and accompanying shipwrights, engineers, and captain—put the **Captain Sutter** together in six weeks at the foot of Folsom Street. This first important steamboat-building venture at San Francisco was followed up with other construction, steam and sail, by Marcucci and others at Happy Valley (between Rincon Point and Market Street), as recounted in his own narrative (Scanland 1895: 13-16, 127-129) and shown in the painting by Augusto Ferran of 1850 now in the Bancroft Library. Marcucci does not make it clear when he moved out to Steamboat Point, around Fourth and King; it may have been in 1853, perhaps not until 1859. In 1866-1869 he built the sternwheeler **Pioneer**, the propeller **Santa Cruz**, W. C. Ralston's steam yacht **Brisk**, and the steamer **Vallejo** at Tichenor's Second Street yard. The earlier yard between Third and Fourth produced the ships **Reliance**, **Cyrus Walker**, and **Flora Templeton**; probably the barkentine **Monitor** and other vessels came from this location.

Earlier, John G. North had established his shipyard at Steamboat Point. Perhaps he moved the location slightly at times between 1854 and 1860 (when he moved to the Potrero), but in 1858 he was located "on the south side of Townsend between Third and Fourth." (Scanland 1895: 122-127)

The noblest vessel ever to be launched from Steamboat Point, the sidewheeler **Chrysopolis**, came from North's yard in 1860. She was the biggest steamer built at San Francisco up to that date, the grandest of the "floating palaces" of the California river trades, and the all-time speed queen of the Sacramento riverboats. North is said to have built 53 steamboats and 220 vessels of other types, including the first three-masted schooner on the Pacific Coast, the **Susan and Kate Kenin**, launched at Steamboat Point in 1854. (North, 1854)

Another famous and prolific Steamboat Point builder was Patrick Henry Tiernan, one of whose earliest jobs at San Francisco involved reconverting the steamer **Goliah** to tugboat service at Steamboat Point. Tiernan had built the sidewheeler **Paul Pry**, the sternwheeler **Peytonia**, and the steamers **Petaluma** and **Sophie McLean** at the foot of Third Street (about Third and King) between 1856 and 1858. At around Fourth and Townsend, he built the sternwheelers **Visalia** and **Swallow** and the sidewheelers **Sacramento** and **Oakland** between 1859 and 1861. (North 1899: 143-153) Apparently moving back and forth between a Fourth Street and a Third Street location, he built the steamers **Banner, Esmerelda, Governor Dana**, and **Julia**, together with a number of barges, in 1862-1864. Then he, too, moved out to the Potrero, complaining, as had North, that Steamboat Point just didn't have enough elbow-room any more. In 1870 he revisited the foot of Second Street to supervise the building of the Southern Pacific's huge railroad-car ferry **Thoroughfare.**

Henry Owens built the sidewheeler **Enterprise** near Fourth and Townsend in 1860, and there must have been several small builders on the Fourth Street shore extending to King Street and beyond, perhaps mostly engaged in the repair business. The little yards that show in the photos of Steamboat Point and South Beach in the mid-sixties--the kind of places that repaired and did routine bottom jobs for bay workboats--also tended to move out with the decade, it would seem, for in the 1870's and later Hunters Point was the main locale of such businesses. The building of Long Bridge to the Potrero and Hunters Point was one improvement that encouraged these moves to what were really more physically desirable locations for shipbuilding and boatyards.

Plate 1: Long Bridge in 1867 . . . Completed in 1865, this wharf-like bridge carried the horsecar tracks from the foot of Fourth Street to the new industrial district of the Potrero. Structures were built on pilings alongside during the late 1860's, two of them at about Fourth and Channel, near the east end of the C-4 alignment. (California Historical Society)

Plate 2: The Steam Paddy Working on Mission Bay Fill, ca. 1867 . . . This photo was taken at Eighth and Harrison, where David Hewes's power shovel was then cutting down the sand hills that formed a large part of the fill for the Mission Bay shore. (Society of California Pioneers)

This brief survey of Steamboat Point shipbuilders of the 1850's and '60's is not all strictly associated with the C-I alignment, for it would appear that most of the activity was concentrated around the foot of Third Street and Second Street on the eastern shore of Steamboat Point. However, references to these builders occupying sites at "Fourth and King" and "Fourth and Townsend" suggest that some building and repair work took place on the southern shore of Steamboat Point on or within 150 feet of the northeast side of the C-I alignment on Fourth Street between Berry and King Streets. We have found no photographs or views of any kind showing this stretch of shoreline during the late 1850's and early 1860's (though there are scores of pictures of waterfront activity elsewhere around the city); furthermore, shipbuilders of the time were notoriously unspecific as to the location of their yards in the city directories (often listing only their residence addresses), and, finally, the later-day designation that goes, "It was right where the Southern Pacific station now stands," sounds entirely too much like a convenient generalization about an early shoreline location to be taken as a precise address.

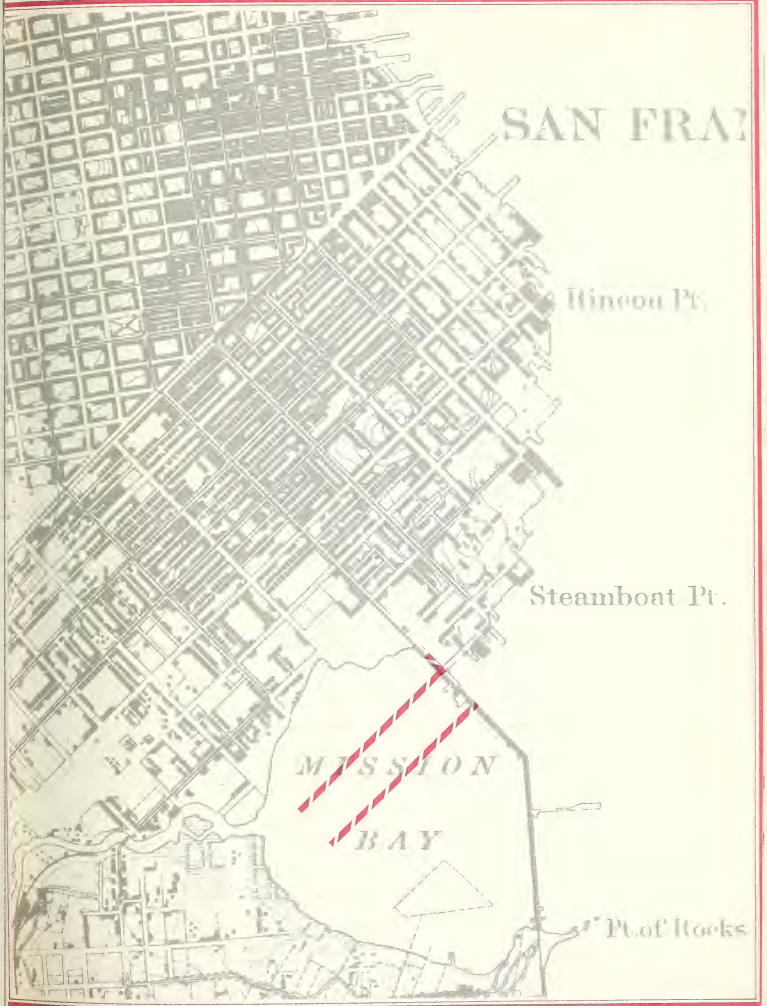
By the time we get to a detailed and reliable source for the development of the foot of Fourth Street and the beginnings of Berry Street—the 1869 Coast Survey Chart of the San Francisco Peninsula (based on survey information of 1867 and 1868)--the shipyards are gone from Steamboat Point, with the exception of Tichenor's Ways at Second Street. (See Map 3)

Long Bridge and Berry Street: The construction of Long Bridge (see Plate I) out the line of Fourth and Kentucky Street to the Potrero and then on to Hunters Point began the enclosure of Mission Bay. Oddly, references to the construction of this important and conspicuous civic improvement are apt to be vague; the reliable J. S. Hittell completes the bridge in 1864 and then builds it in '65. (Hittell 1878: 347,353) Langley's **Directory** for 1865 places the driving of the first piling on February 6, 1865. With the bridge in place and structures springing up on it and along it, there is certainly cultural material on Fourth between King and Berry and at Fourth on the south side of Channel Street. What kinds of material?

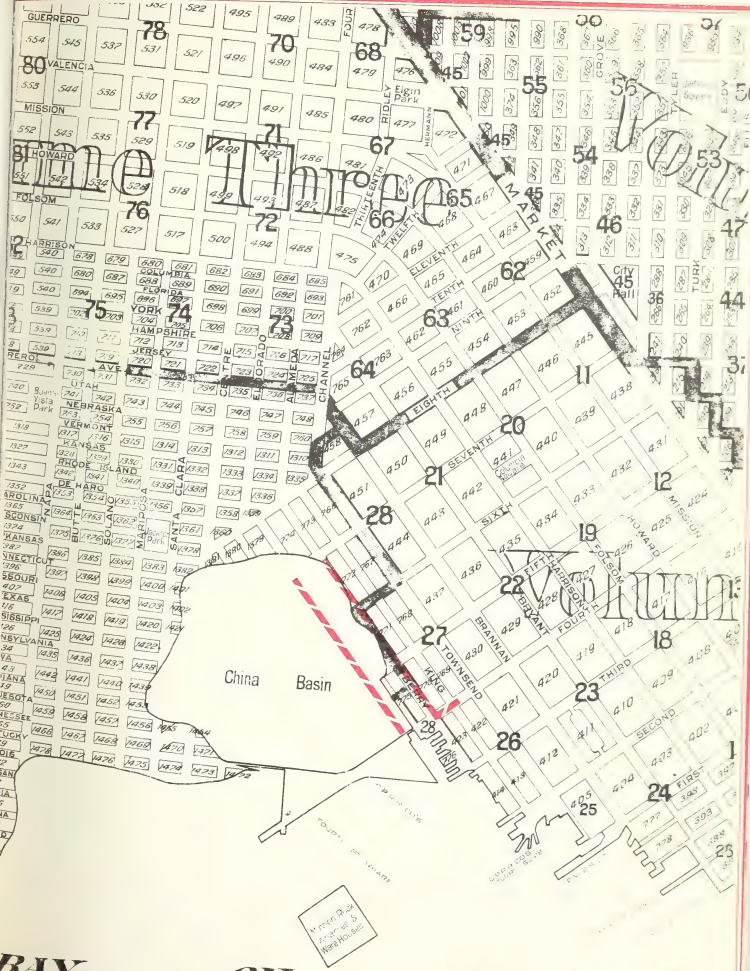
Aside from pilings, probably only artifacts connected with construction and marine-related activities earlier present--nails, spikes, and bolts; broken or discarded tools; bottles and other personal-consumption debris from workmen; and, of course, small things lost overside. Map 3 shows filling southward to Fourth along King Street, perhaps with material from the leveling of Steamboat Point.

Along Berry Street between Fourth and Third Streets are several wharves, one of which may be the brick South Point Dock that shows clearly on maps and in photos much later. This construction is of interest because it represents the beginning of wharfage along the long-intended Channel Street waterway--but except as such development adjoins Long Bridge it is east of the sewer alignment.

In sum, the second most critical era from the standpoint of historical archaeology (Gold Rush to 1865) still leaves the Fourth Street block between King and Berry as the only likely location for any cultural materials. While there are probably no such materials for the period **prior** to 1852, there no doubt are materials of this later period, but we cannot suggest the likelihood of finding cultural materials that by their nature or placement will add to our understanding of the cultural history of San Francisco.



MAP 3- U.S. Coast Survey, 1869



AP 4 - *Sanborn Map Co., Index of San Francisco, 1877*

LATE NINETEENTH CENTURY; EARLY TWENTIETH CENTURY . . . 1866-1919

Channel Street Area Development: Great changes took place in the topography and use of the Channel Street area in the two decades following the construction of Long Bridge in 1865. The appended maps, views, and photographs tell a good part of this story--and are in some cases the prime source for the description of this changing area.

It can be seen in the Coast Survey Chart of the San Francisco Peninsula dated 1869 (Map 3), and the birdseye view of 1868 (Plate 3), that within three or four years after the building of Long Bridge, Berry Street between Third and Fourth Streets (for the most part beyond the C-1 and C-2 alignments to the north and east) had been filled to grade, and that wharves and buildings had been constructed out to the line of the proposed waterway of Channel Street. A photographic panorama (Plate 6) shows this block on the north side of the channel in about 1886; development of this general type (brick, wood, lumber, stone, and coal yards, planing mills and other industries) extended southward and in a less intensive form to Seventh Street by this date or shortly after. However, the filling of Berry Street itself along the C-1 alignment from Fourth out to Seventh Street had lagged behind the development of the block between Fourth and Third.

As early as 1870, the San Francisco Glass Works was installed on King Street between Fourth and Fifth Street (see history of this works below)--which implies substantial southward filling from Long Bridge a

couple of years after the survey information of the 1869 chart. The Sanborn Map and Publishing Company's Index Map of 1877 (Map 4) shows Berry Street between Fourth and Fifth in place and the block out to the channel filled. The **Biennial Report** of the State Harbor Commissioners for 1877-1879 mentions a suit to recover $114.25 in dockage tolls for a wharf between Fourth and Fifth Streets in 1877. The suit attests to the existence of a wharf on the channel south of Berry; the size of the claim is probably a good indication of the modest level of usage.

This 1877 Sanborn Index Map also shows Berry Street partially filled between Fifth and Seventh Streets. Unfortunately, the detailed block maps for the 1877 index sheet did not turn up in the search of such depositories as the New York Public Library and the Library of Congress made by the Bancroft Library a few years ago. Yet while the outline on this index map appears crude, it is probably not at all casual, as it was associated with very detailed maps designed to show streets and buildings and frontages exactly as they were at the time of issue, in contrast to many business or "official" maps of growing San Francisco that showed streets and blocks that were actually under water. Indeed, the manuscript map prepared by the Engineer of Harbor Commissioners in 1877, showing piers, associated structures, and the proposed new seawall line, provides nothing but a regular and "official" street and block pattern southwest of Fourth and Channel, when there is abundant visual evidence in the form of photographs and lithographic views (see Plate 4) that most of these streets and blocks existed **only** as a plan on the map. A clue to the beginning, but not necessarily the completion of grading Berry Street between Fifth and Sixth appears in a claim against the city mentioned in the **Municipal Reports** for work done by a contractor in October, 1873.

In any event, Berry Street must have been brought to grade all along the C-1 alignment not long after the publication of the Sanborn 1877 Index Map, for the "Berry Street Railroad" (a horsecar line) was projected in the fall of 1877. (Langley, 1878: 20)

As can be seen in the 1884 Coast Survey Chart (Map 5) the south of Channel Street embankment (C-4 alignment) was in place in the early

Plate 3: Birdseye View of the South of Market Area, 1868 . . . Views of this type vary in accuracy, but this one by C. B. Gifford is notable for its correct detail. Thus, it not only agrees well with the 1869 Coast Survey Chart (Map 3), but gives a three-dimensional feeling of the activity. (1) Shows the original San Francisco Glass Works between Townsend and King near Fourth Street. Just below (2) is the early activity on Berry Street between Third and Fourth. (3) Shows how Fourth Street extended into Long Bridge, connecting the South of Market with the Potrero and Hunters Point. (Bancroft Library)

Plate 4: Birdseye View of 1878 . . . Ten years after the view at the left, Long Bridge had been filled. The San Francisco Glass Works had moved to the block between Berry, King, Fourth, and Fifth Streets (1). The development of Berry Street along the shore of Mission Bay (2) on the C-1 alignment appears slight or absent, but this was a Currier & Ives print out of New York and may have reflected appearances two or three years earlier. As can be seen, it was by no means so accurate a drawing as the local product of 1868, but such features as the huge train sheds give a correct impression of the progress of the area. (New York Public

Plate 5: Birdseye View of the Potrero and Channel Area, 1892 . . . This view of what was then known as "South San Francisco" shows the Channel Street activity and Berry Street buildings (1)--but gives a good impression of the extremely low level of development on the south side of Channel Street (C-4 alignment) even at this late date. The filling of Mission Bay (2) is still far from complete. The low long freight sheds of the Southern Pacific (3) can be seen on Berry Street. (Bancroft Library)

'80's and the channel itself dredged sufficiently to accommodate coasting vessels.

Fill: Gerald Dow ("Bay Fill in San Francisco") was unable to identify to his own satisfaction the source of the fill that overlies the area of the C-1 and C-4 alignments—and we have little to add. Dredged mud, sand, and earth from the area south of Market, Rincon Hill, and Steamboat Point, and trash (including post-earthquake debris) will probably be encountered. The Berry Street alignment was filled in the 1870's, and the fill no doubt includes sand removed by the "steam paddy" (seen in Plate 2) from the area of the Mission. But filling of Mission Bay southward was to continue for two decades. (Dow: 129 ff.) A real estate promoter's birdseye view of the area in 1892 shows a large part of Mission Bay unfilled and little in the way of building on the south side of the channel. (See Plate 5) Regarding this view, it should be noted that it was in the interest of the artist to show as "progressive" a scene as possible, and he has not hesitated to include an imaginary bridge at Fifth Street and a non-existent dredged channel to Eighth.

Bringing the Streets to Grade: The National Park Service guidelines for this study request the description "resources located within 50 feet of each side of the construction right-of-way limits." Because of the nature of the alignment along Berry Street, this requires a description of the types of business and other activities along the streets. However, it is apparent that cultural materials associated with these businesses are not apt to be found in the street excavation from a period after the bringing of the street itself to city grade, and certainly not after the date of pavement.

In the C-1 and C-4 contract areas grading and paving took place at various times in different blocks. It is not always possible to determine the precise date of grading or paving from the **Municipal Reports,** as it was frequent practice for owners to grade and sometimes plank streets by private contract for acceptance by the city. This appears to be the case of the block on Berry Street between Fourth and Fifth that may be

associated with a deposit from the glass works. The next block, from Fifth to Sixth, was done under city contract in August of 1873. It was 1880 before Seventh Street from Berry to Channel Street was graded. (**Municipal Reports**, 1868 thorugh 1888)

By 1887, the date of the first extant Sanborn maps, and the base date of the survey that follows, the Berry Street and Fourth Street (C-1) alignments were graded and surfaced. (See the Appendix for a note on the various experiments with surfacing San Francisco streets.) The C-4 alignment was still sufficiently primitive that it is scarcely shown on the Sanborn maps, but it appears likely that the fill had been brought to grade.

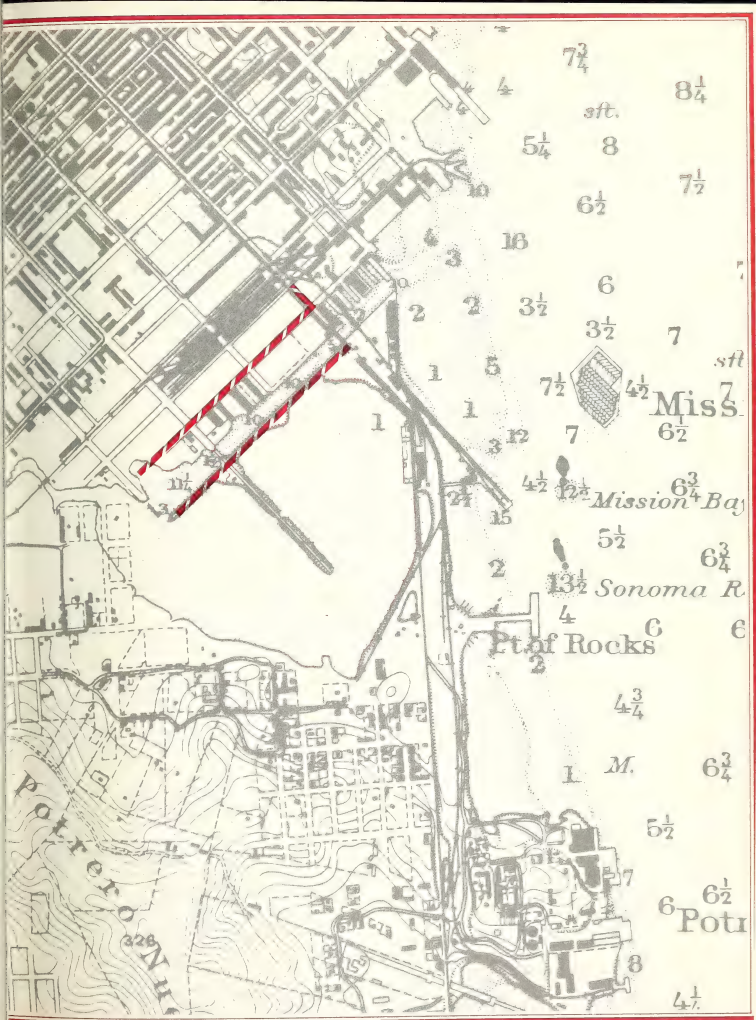
Therefore, it must be emphasized that while the large amount of activity along the alignments in the mid-'80's and after is reflected in a lengthy description, the probability of cultural remains from business activities of this later period within the precise limits of the excavation is extremely low.

Berry Street: Seventh to Sixth, on the South Side

Using the Sanborn Insurance Maps of 1887 and their 1891 updated version, together with the 1915 Sanborn Maps (updated to 1919), plus appropriate business directories from 1870 to 1919, it is possible to reconstruct the nature of the business activities along the C-1 and C-4 alignments. The panoramic view of Channel Street, taken in about 1885 (Plate 6), gives us a visual impression of the brickyards, haywharfs, and the relatively small businesses that characterized the areas.

Block #1597 on the 1887 Sanborn Map (A) shows the alignment from the corner of Seventh and Berry, down Berry to Sixth Street, with the channel at the "backdoor" of the businesses along the creek. The informal nature of Berry Street businesses, which were as apt to be outdoors as inside, is indicated by the presence of "shanties," "sheds," and "tool houses" that are sometimes out in the street itself, and sometimes are extensions of the firms that front on the street.

The **Cement Brick Company** was 50 feet wide along the south side



AP 5-U.S. Coast Survey, 1864

MAP A
Sanborn, 1887
Berry St., Block 1597

Mission Creek Channel

1597

BERRY STREET

SIXTH ST.

SEVENTH ST.

FILLED

ROADWAY

Scale of Feet

ALEXR HAYS
SHIP BUILDING YARD

BOOLE AND BEATONS
SHIP BUILDING YARD

CEMENT BRICK COS WORKS

BRIDGE

of Berry Street and extended over 200 feet from Berry to the channel in back. A frame building contained a mixing yard, brick beds, a water tank, and a kiln. The company itself had offices at 402 Montgomery Street. It is not listed in the 1885-86 Langley **Directory** though it continued in business from 1887 through 1890. By 1891 the brickworks site was occupied by a hay barn owned by Scott and McCord. After the turn of the century, the Southern Pacific tracks curved around in front to reduce the hay barn by 50 feet in front and cover the corner lot that was vacant on the 1887 Sanborn map. By 1915 Scott, Wagner, and Miller owned the hay barn, which was an open shed with two small shanties next to the Southern Pacific's spur.

The shipbuilding yard of **George Boole and Angus Beaton** is shown adjoining **Alexander Hay's** shipyard, and together the two yards occupied 325 feet along the south side of Berry and extended about 220 feet deep along the irregular 1887 bulkhead of Mission Creek Channel. As can be seen in Plate 7, the wharves were parallel to the shore, as they are to this day.

The Langley **Directory** of 1879-80 advertises George Boole and Artemus Webster as shipwrights, caulkers, and spar-makers with offices at #5 Spear Street. A spar-maker's yard along Channel Street is seen at the C. A. Castner Company yard in the 1890's. (Plate 8) George Boole first appears in the city directories in 1875 on Steuart Street, and then maintains his office on the Spear Street Wharf from 1879 to 1891 with shipyards in various areas that are not listed in the directories of the time. A separate commentary on shipbuilding follows, with a more precise description of the activities that took place at both **Boole & Beaton's** and **Alexander Hay's** yards. Bandsaws, tool sheds, and shanties that extend out into Berry Street are the only structures indicated by the insurance maps. By 1891 the space occupied by Boole and Beaton was vacant--the shipyards were then in Oakland.

Alexander Hay maintained an office at 721 East Street in 1885, with a shipyard listed as "Mission Creek near Berry," later listed as the "South Side of Berry between Sixth and Seventh." He operated the yard there until 1891, when he, too, moved his operation to Oakland. In 1919

both shipyards were lumber and brick yards with several small storage sheds that were little more than shanties.

The north side of Berry Street is shown as a vacant lot in 1887 and was still empty in 1891. By 1915 the Southern Pacific tracks occupied the entire block #1838 from Seventh to Sixth. A stone loading platform 450 feet long with a scale and tiny office fronted on the north side of Berry to the corner of Sixth Street.

Directly beyond Alexander Hay's shipyard, the **American Oil Company** had a small works (fifty feet fronting on Berry and extending 100 feet deep backing on Hay's shipyard) containing steam oil-boiling tanks, three steam chemical mixing tanks, a barrel yard, and boiling kettles. Alfred Moore was the president, and the company maintained offices on Market and California Streets. No works or factories are listed in the directories. The firm was still on Berry Street in 1890, but by 1891 the space was occupied by the Pacific Brick Company. By 1915 the Pacific Brick Company name was not shown on the Sanborn maps, but the entire area was a large brick yard. **Waldstein's Cigar Box and Packing Factory** extended for 80 feet along the south side of Berry and 200 feet deep towards the channel. The factory was of frame construction, more of a complex than a single building. One of the older businesses on Berry Street, the cigar box factory was originally at 241 King Street from 1876 to 1878, when Abraham Waldstein moved to "Berry near 6th." The plant contained its own lithograph-printing room for cigar box labels, wood-working machinery, a box nailing room, a paste room, and a storage shed for sulphur. The cigar boxes were made out of Spanish cedar and redwood. In 1882 men, boys, and girls worked in the factory. Although Chinese tended to dominate the cigar production during the '70's and '80's, Waldstein hired "only white workers," who produced about 1,500 boxes a day. (Hittell 1882: 601) By 1890 Waldstein had taken in Frolich and Meighan as partners. The name of the factory was changed to the Pioneer Cigar Factory and moved to 320 Sansome. The 1891 Sanborn Map shows the site as vacant except for a two-story frame dwelling over the old steam lithograph press area. By 1915 brick and lumber piles filled the entire area.

The corner of Block #1597, where the south side of Berry Street

Plate 6: Channel Street Panorama, ca. 1885 . . . Hay and lumber, bricks and firewood typified the bulk material businesses that characterized the area from the mid-1880's through the First World War. Some objects of interest in this unique view are: (1) the building of the Sierra Lumber Co., at the corner of Fourth and Berry, adjoining the C-1 alignment; (2) the Patent Brick Co. wharf; (3) the San Francisco Lumber Co.; (4) the South Point Warehouse, midway between Third and Fourth Streets, which appears on the 1869 Coast Survey Chart (Map 3).

In the background (5) is the Southern Pacific main office at Fourth and Townsend. Ritch Street, running through to the C-2 alignment at King, is at (6). A firewood scow (7) is at James Alexander's wood wharf. The big gas tank (8) is at the Pacific Gas Improvement Co., next to the old Pacific Oil and Lead works between King and Townsend (9). At (10) is the Sacramento Brick Co.; (11) is the South End Boat House, a rowing club; (12) is the San Francisco Gas Light Co. tank. (Bancroft Library)

Plate 7: Channel Street, East from Sixth, ca. 1910 . . . Berry Street businesses backing on the Channel are seen at the left. To the right are the extensive lumber yards of the south side of Channel Street, with a typical coastal three-masted schooner and steam schooner alongside.

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meets Sixth Street, remained unchanged from 1887 to 1891. A small (14 by 8 feet) saloon occupied the corner; a few frame shacks, not much bigger than the saloon, were scattered over the corner lots--some vacant, some occupied with small shops or saloons. By 1919 even these had been torn down and replaced by piles of lmber.

Paving: The Berry Street area itself (82.5 feet wide) had a 6" water pipe laid down the center by 1887. Two additional 12" water pipes were laid down by 1919. All of the Berry Street alignment was paved with basalt blocks set in sand. These are extant today, and it is the policy of the city of San Francisco to save and store these handsome, blue-gray blocks to use for decorative purposes in city parks and walkways.

Basalt paving was coming into common use in San Francisco by 1879-80, after all kinds of attempts to employ cheaper or more "progressive" materials. Plank streets (universal in the 1850's) wore out rapidly under heavy traffic, though they continued to be popular where traffic was light, and in areas along the waterfront where the streets were in fact piers on pilings. Cobblestones from the bed of the American River or other Sierra streams made an extremely durable pavement, but were very hard on horses and wagons, as well as being quite expensive. During the 1860's and '70's the introductions to Langley's **Directories** dealing with "Improvements to Streets" constantly referred to experiments with woodblock paving with end-grain upright (rotted out quickly), various types of asphalt paving (ground up into dust, sagged, and cracked), and "imitation stone" (concrete paving blocks that never lived up to their reputation for eternal durability). The northern European system of paving with cut-stone blocks—which San Franciscans today incorrectly call "cobblestones"—proved most successful, and in 1879 1,059,665 basalt paving blocks were laid on San Francisco streets, as compared to 45,065 true cobblestones. (Langley, 1879-80: 30) These provided a comparatively smooth surface so durable that when modern asphalt compounds came into use the stones were merely lightly paved over to gain additional smoothness. (See Appendix for a fuller description of San Francisco street paving.)

Shipbuilding: Surprisingly, shipbuilding returned to the era even as Channel Street was becoming a proper berthing facility. Alexander Hay and George Boole both operated shipyards on Berry Street between Sixth and Seventh in the late 1880's. The Hay yard in 1887 and 1888 turned out the steam schooners **Alcazar, Navarro, Point Arena, Pasadena, Noyo, Hooper, Point Loma, Venture, Jewel, Scotia, Farallon, National City,** and **Mendocino.** Boole & Beaton built the **Tillamook, Cleon, Cosmopolis, Ajax, Newsboy, Del Norte, Silver Spring, Westport,** and **Rival.** (McNairn: 129 ff.) These two builders were at this time the largest constructors of steam schooners on the coast—and their vessels revolutionized the lumber trade. With the ability to deliver on contract schedule, the steam-powered lumber vessels (there was nothing "schooner" about them) could provide reliable inventories, winter and summer. For the appearance of the early steam schooners see Plate 9—a classic shot taken when the **Jewel** was still the latest thing in coastal shipping.

These smaller steamers of the new era in coastal shipping opened the Redwood Coast to winter as well as summer loading operation, and served as well the Oregon and Washington coasts. The big sailing schooners still—for a few years—dominated the long Puget Sound-Southern California runs, but the volume of lumber that could be carried in a year by those 22 vessels launched by Hay and Boole in 1887 and 1888 was as much as an armada of sailing vessels might transport.

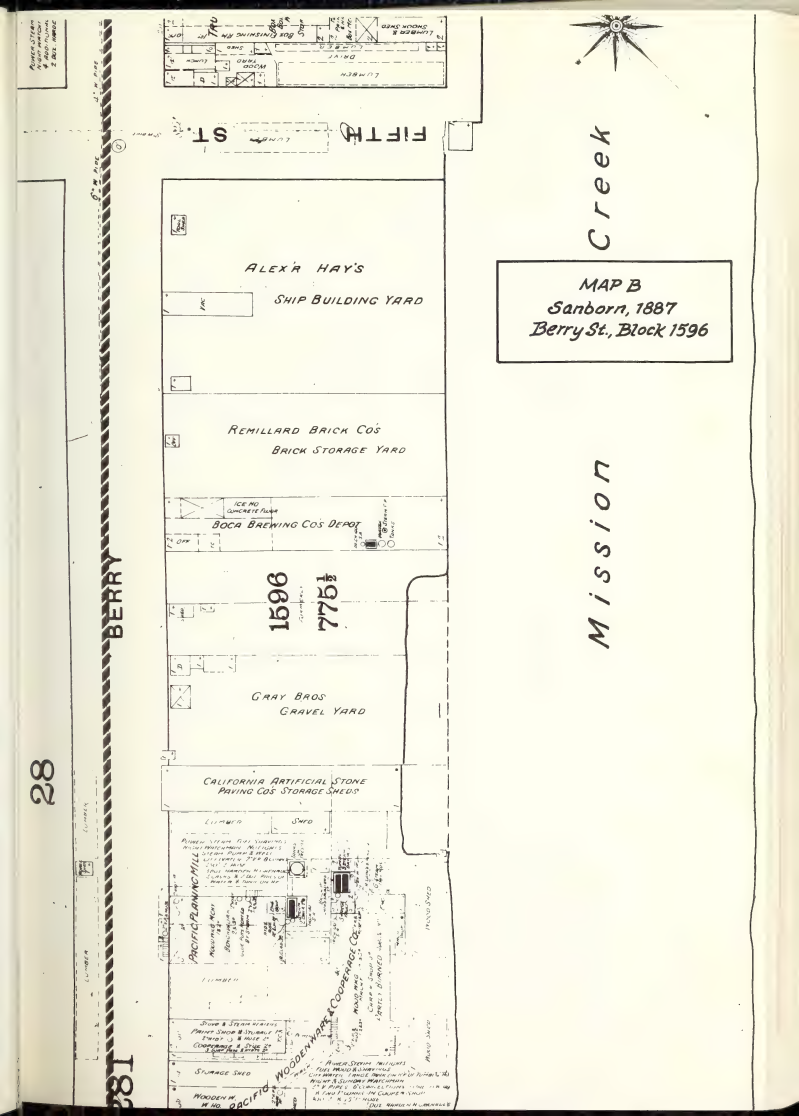
The kinds of cultural materials that might remain in the mud or fill layers on the Hay and Boole sites are not, however, apt to be very revealing. The kind of work done in building these vessels can be seen going on today at the Golden Gate Recreation Area's Maritime Park at Hyde Street.

Berry Street: Sixth to Fifth, on the South Side

Block #1596, shown on the Sanborn 1887 block map (Map B) on the south side of Berry from Sixth to Fifth Street, was largely devoted to industries associated with lumber—woodenware works, a cooperage, a planing mill,

Plate 8: A Spar-maker's Yard on Channel Street, 1896 . . . The yard of C. A. Castner & Co. turned out spars of all sizes—up to the 110-foot sticks for the three and four-masted schooners. The spar-makers are posing on or within a few feet of the C-4 alignment. (S. F. Maritime Museum)

Plate 9: The Steam Schooner Jewel . . . Built by Alexander Hay at one of his two yards between Berry Street and Channel in the late 1880's, she measured 250 tons and was powered by a compound engine built at one of the South-of-Market iron works. A yard with a square foresail was handy for a booster coming down the Mendocino Coast in a breeze, but these vessels were basically steamers. (Bancroft Library)


MAP B
Sanborn, 1887
Berry St., Block 1596
ALEX'R HAY'S
SHIP BUILDING YARD
REMILLARD BRICK COS
BRICK STORAGE YARD
BOCA BREWING COS DEPOT
1596
775½
GRAY BROS
GRAVEL YARD
CALIFORNIA ARTIFICIAL STONE
PAVING COS STORAGE SHEDS
PACIFIC PLANING MILL
PACIFIC WOODENWARE & COOPERAGE CO.
FIFTH ST.
BERRY
Creek
Mission
28
28

and shipbuilding--plus storage sheds for stone, gravel, and brick. The corner lot on Sixth Street was a complex of frame buildings belonging to the **Pacific Woodenware & Cooperage** works extending 140 feet along Berry and over 200 feet to the Mission Creek Channel. A three-story building (50 by 100 feet) contained the woodworking machinery and a machine shop. It was connected by a wooden walkway to a two-story frame warehouse directly on the corner of Sixth and Berry which also maintained a small office on Sixth Street. A storage shed connected the corner warehouse with the cooperage works and paint shop, a two-story building. Stacks of lumber were piled in yards, and facing the channel were long, low covered sheds to receive the lumber from incoming ships.

The woodenware and cooperage factory was previously operated under the name of Coos Bay Stove & Lumber Company, and its 1885 notice read, "Pails, Tubs, Churns, Washboards, Ice Chests, Butter Firkins and Kids and all descriptions of Woodenware. Also Wine and Whiskey Barrels and Kegs, Salmon, Beef, Butter and Vinegar Barrels, Syrup and Pickle Kegs, and a general line of Cooperage Stock . . . Spruce, Maple, Sugar Pine, Fir, White and Red Cedar, etc., always on hand . . . Woodenware Factory, corn. Sixth and Channel Streets." (Langley, 1885: 1376)

By 1886 there were two factories, one on Berry and another on Brannan between Seventh and Eighth. As early as 1885, John L. Koster was the manager of the woodenware works, which continued in business through 1894 with the addition of a large gravel yard at the southwest corner. (**Block Book**: 319) According to Bancroft, writing in 1890, there was a great demand for "wine, liquor, and beer, and especially for wine casks . . . but an insufficient supply of coopers . . . . Tubs, chests, and the like were made by three woodenware factories, two of which are in San Francisco." (Bancroft 1890: v. 7, 80)

By 1915 the Pacific Woodenware & Cooperage was no longer on this site. All that remained was the gravel yard at the southwest corner. The firm of Scott, Magner, and Miller & Company had a 50 x 75 foot open-sided Hay Barn #2 at the corner of Sixth and Berry and a Southern Pacific spur cut directly through the site, 50 feet in from Berry Street. Lumber was stacked over the entire area.

Adjoining the Pacific Woodenware & Cooperage was the **Pacific Planing Mill**, a three-story building with iron shutters, extending 60 feet along Berry and 100 feet in depth, housing woodworking benches, glue vats, and steam powered tools. In the rear, a brick-and-lathe plastered two-story building (80 by 40 feet) contained steam dryers and tanks on trestles. The mill first appears in Langley's 1885 **Directory** and was still in existence in 1901, having added a sash and molding shed and glazing equipment.

The Pacific Planing Mill was just one of 17 such mills in San Francisco in 1885. The South Point Planing Mill (Berry between Third and Fourth, owned by C. A. Hooper) and the Stockton Planing Mill (Berry between Third and Fourth) also faced on Berry Street with convenient berthing for lumber schooners in the channel at their backyards. For a typical operation, see Plate 10. Lumber and lumber yards abounded in the area. "In connection with lumber manufacture have sprung up a number of planing mills for preparing frames, casings, doors, sashes, balustrades, cornices, and other ornaments . . . . The redwood is admirable for these purposes in being easily worked, and it does not warp, crack, or stain the export demand extends to these manufactures . . . . The mills are sustained by the general predilection for wooden dwellings, brick being objected to on account of dampness and lurking fear of earthquakes, so as to be virtually restricted to business houses . . . . The apparently flimsy yet strong Chicago frame structure is the favorite, with elaborate facades, San Francisco being remarkable for the use of bay-windows for catching the sun and enjoying a view in comfort, piazzas and balconies being here too exposed to the windy and chilly atmosphere." (Bancroft 1890: v. 7, 78)

The Pacific Planing Mill was owned by Marquand and Albert Hansen, who were listed in the 1879 Langley **Directory** as mill workers, but who founded the Pacific Mill as early as 1885 and continued with it through 1907. By 1915 the area was open lumber stacks with no ownership given on the Sanborn map.

The **California Artifical Stone Company** maintained a shed fronting 40 feet along the south side of Berry and extending 200 feet in depth to

Plate 10: A Berry Street Planing Mill, ca. 1895 . . . Tefler and White's Planing & Sawing, and Mouldings Made to Order, together with Townley Brother's Bandsawing, Shaping, Turning, Brackets, Corner Blocks, and General Jobbing, gives a good idea of the typical woodworking business along Berry Street in the 1880's and '90's. The balcony above on the right was the business address of Jesse Drew, "The Stair Builder," in 1887. These informal structures were also typical of the businesses along Channel and Berry Streets. Garvin Tefler and F. T. White ran their planing mill on the north side of Berry between Third and Fourth—just beyond the C-1 alignment. (California Historical Society)

the channel. The company was founded on Berry in 1879. Bancroft points out that "the Shillinger processes are now meeting with favor, chiefly, for pavement. . ." (Ibid.: v. 7, 98), and the 1879 Langley **Directory** notes that the California Artificial Stone Paving Company used the Schillinger patent—a cement process. The continuing problem of how to best pave San Francisco streets was still a running argument in 1890, as Bancroft notes that several cement companies had failed. The shed was still there in 1891, but bore the note, "Building is old and cheap." By 1915 the area was part of the open lumber yard transected by the Southern Pacific spur.

Gray Brothers Gravel Yard was an open area facing on the south side of Berry Street for just under 100 feet and again running through to the channel some 200 feet to the rear. Five small shanties clustered near Berry Street, spilling over into the street itself. George and Henry Gray specialized in "artifical stone walks and Portland cement cellar bottoms." (Langley, 1886) By 1891 they were gone and Ransome and Cushing owned the gravel yard, having added a rock crusher and a narrow (15 by 150 feet) storage shed, running towards the channel. Gray Brothers had moved their business to Alameda and changed the name to "The Paving Company." By 1916 the Producer Hay Company had built Warehouse #2 on the site, which consisted of rows of wooden posts with "iron on the studding."

A 100-foot vacant lot along Berry extending to the channel in 1887 became the Point San Pedro Brick Yard and Stone Cutting Yard by 1891. Both areas were still largely open storage and work spaces with two small offices on Berry Street. By 1915 Scott, Magner, and Miller Hay Warehouses #3 and #4 (covered sheds with wooden post construction) occupied the former brick and stone cutting yards. Small offices fronted on Berry and the Southern Pacific spur continued past the hay sheds.

In 1887 the **Bocca Brewing Company** maintained an ice house and several small tanks on a parcel that fronted on the south side of Berry for just under 50 feet and extended the full depth of 250 feet to the channel. The Bocca Brewery is listed as early as 1879 in Langley's **Directory**, but it is not certain where their "depot" was at the time.

William Hesse was the superintendent from that early date through 1886. Hittell, writing in 1882, says, "The Bocca Brewing Company has works at Bocca, Nevada County, and manufactures the only lager beer on the coast. Capital amounting to $300,000 is invested, 80 men are employed and the sales are 25,000 barrels per annum." (Hittell 1882: 575) The depot on Berry Street was set up to receive barrels of lager by boat from Oakland. By 1891, although the Bocca Brewery was still in operation, this site was occupied by C.S. Healey's Hay Barn, which consisted of an open yard with a small office on Berry Street. By 1915 this property was the beginning of Wilson Brothers Lumber Yard--an activity that extended through the rest of Berry Street on the south side to Fifth Street.

The **Remillard Brick Company** used the adjoining property as a storage yard in 1887 (100 feet along Berry, 250 feet deep to the channel). One of the oldest brick manufacturers in San Francisco, they maintained extensive yards and kilns all over the bay area. (Langley, 1868) Edward, Hillaire, and Peter Remillard directed the company from their offices on East Street between Broadway and Pacific, and all three brothers resided in Oakland. In 1882 Hittell reported that almost half of the laborers employed making brick were Chinese. Furnaces were established as near deposits of clay as possible. One Remillard kiln still exists near San Quentin in Marin County, where the Chinese laborers were imported from Santa Rosa as late as 1897. The yard on Berry Street was set up to receive bricks from the Remillard scows that could berth along the channel, and it continued to do so on through 1891 at the same site, dealing in "fire brick, fire clay, lime, plaster and cement . . . ." (Langley, 1885) By 1916, although the Remillard Brick Company was still in business (having enjoyed an extensive boom from the rebuilding following the 1906 earthquake), it no longer used the Berry Street yard, which was now part of the Wilson Brothers Lumber Yard.

Alexander Hay maintained a second shipyard on the remaining land on the south side of Berry Street to Fifth from 1885 through 1890. This yard measured 200 feet along Berry and ran 250 feet deep through to the Mission Creek Channel. Hay's shipbuilding activities have been previously described. Only two small toolsheds and a small vacant frame

building (20 by 60 feet) are indicated on the Sanborn Map of 1887. In 1891 the frame building was occupied by a Standard Oil Company storage tank and the **Pacific Lumber Company** stored an average of one million feet of redwood lumber where Hay's shipbuilding business had been. The main yard of the Pacific Lumber Company was across the channel. By 1891 the Pacific Lumber Company had 12 branches, including yards at Third and Berry Streets and Fourth and Channel Streets.

In 1919 lumber was still the predominant business along this end of Berry to Fifth Street, but the stacked lumber (averaging 10 million feet) now belonged to the Wilson Brothers, and the Hart Wood Company had constructed a covered shed on Fifth Street. A very small office for lumber operations was located at the corner of Berry and Fifth. The Southern Pacific spur became a double track, running 450 feet into Fifth Street.

Berry Street: South Side From Fifth to Fourth

Block #775 is on the south side of Berry Street from Fifth to Fourth, as shown on the Sanborn Insurance Maps of 1887 (Map C). Lumber was then piled in the middle of Fifth Street, just allowing for the passage of horses and wagons on either side. The corner lot that extended 200 feet down the south side of Berry, and 250 feet down Fifth Street to the Mission Street Channel, with berthing space for lumber schooners along the creek, was occupied by the **Truckee Lumber Company's Box Factory.** (An earlier Langley **Directory** listing shows the company at 321 King Street in 1882.) The company manufactured packing boxes in a complex of sheds and one- and two-story frame buildings that included storage sheds for "shooks" (pre-cut boards for boxes) directly alongside the receiving bulkhead on the creek. Also there was a printing press for labels, engine and machine shops, a large finishing and nailing room, and a shipping room that fronted on Berry Street. Lumber was stacked on all sides, with narrow drives between stacks that extended as much as 20 feet out into Berry Street itself. The company expanded in 1891 to take over the

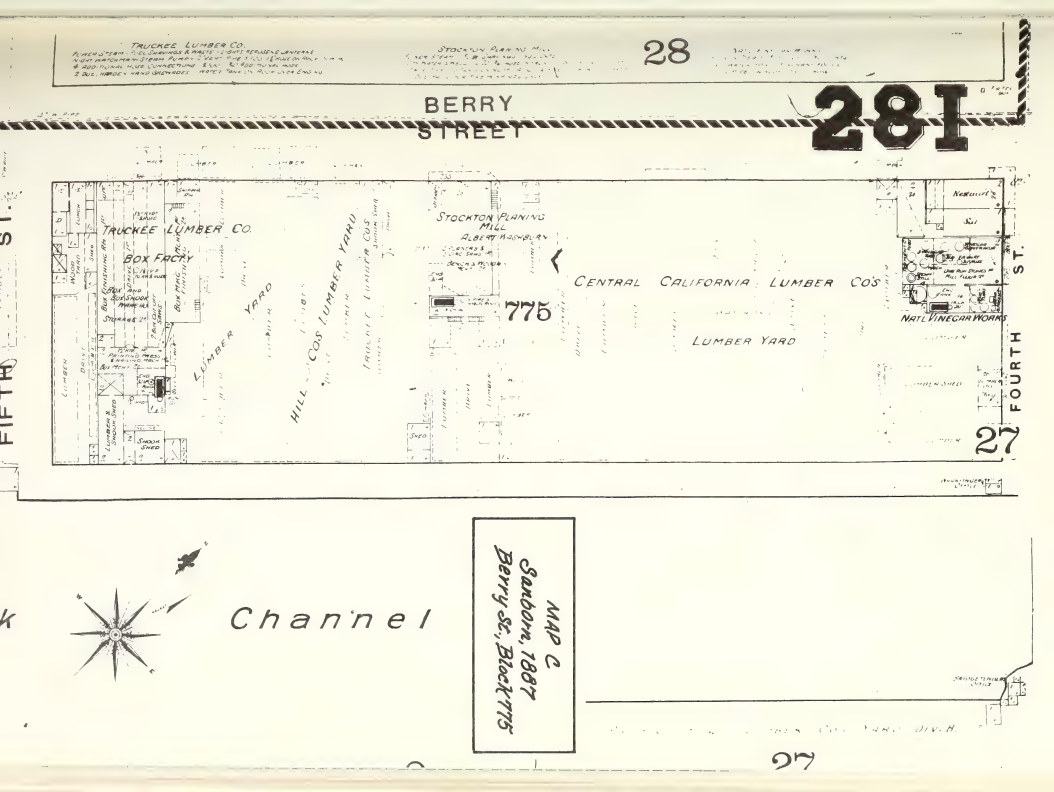
adjoining Hill Company yard, so that it now occupied about half of Block #775.

The business of the box factory was to turn out great quantities of board cut to uniform size. Some were printed with the listing manufacturer's name before being nailed together by hand. Packing boxes were used for dried and canned fruits, soap, candles, sugar, and canned salmon. The factory employed about 40 men, whose wages in 1882 were from $1.50 to $2 a day. (Hittell 1882: 599) A lunchroom for the workers faced on Berry Street. The Truckee Box Company supplied boxes to manufacturers rather than packing fruits, fish, or vegetables right on hand, as was frequently the case. They also supplied shooks to companies that wished to make their own boxes at the point of packing.

Next to the Truckee Box Factory in 1887 was Hill and Company's Lumber Yard, which was absorbed by the Truckee Company by 1891. The Truckee Box Factory and Lumber Yard were in turn replaced (and all structures removed) by 1915 by the Hart Wood Lumber Company, which covered the entire block with its open yards. The Southern Pacific spur ran down the length of the block about 50 feet south of the south side of Berry Street, and stacks of lumber no longer intruded into the street or railroad right-of-way.

The **Stockton Planing Mill,** owned by Albert Washburn in 1887 extended just past the lumber yards, fronting 50 feet along the south side of Berry Street and reaching back 125 feet into a lumber yard (possibly an extension of the Truckee Company's lumber stacks) that fronted on the channel. The planing mill was two stories tall with iron shutters. It contained two planers, circular saws, benches, and woodworking equipment. By 1891 the mill belonged to C. M. DePew, who had added another smokestack and glue pots to the works. The planing mill was still in operation as late as 1895. The mill appears to have existed in a greatly reduced and modified form in 1915. Then it was no longer a structure fronting on the street, but rather a one-story, open-sided shed-like building described as an "electric powered planing mill."

The **Turner-Kennedy and Shaw Lumber Company** occupied nearly half of Bock #775 as early as 1879 (Langley, 1879-80), first under the


TRUCKEE LUMBER CO.
28
BERRY
STREET
281
TRUCKEE LUMBER CO.
BOX FACTY
LUMBER YARD
HILL COS LUMBER YARD
STOCKTON PLANING MILL
ALBERT ASHBLEY
775
CENTRAL CALIFORNIA LUMBER CO'S
LUMBER YARD
NATL VINEGAR WORKS
FIFTH ST.
FOURTH ST.
27
Channel
MAP C
Sanborn, 1887
Berry St. Block 775

name of the Central California Lumber Company (1887) and then under the name of two of the three owners, John F. Kennedy and George T. Shaw, with Andrew J. Turner as the silent partner through 1895. The yard extended 350 feet down the south side of Berry towards Fourth Street, with stacks of lumber that protruded out into the street itself. The L-shaped yard fronted on Fourth Street just below the National Vinegar Works and edged along the channel for easy unloading of lumber schooners from the Pacific Northwest. By 1901 the lumber was stacked on both sides of the Southern Pacific double freight spur and the yard was now owned by Wilson Brothers and Company. The estimated storage of 5 million feet of stacked wood in 1891 gives one a good impression of the scale of the larger lumber operations along the channel.

The southwest corner of Berry and Fourth in 1887 was a cluster of small frame buildings. A two-story building fronting on Berry joined another two-story restaurant and a one-story saloon, which shared a typical planked porch that rounded the corner on Berry and Fourth. By 1891 the saloon was still there, but the restaurant had become a small office.

The **National Vinegar Works** had a two-story frame building that fronted on Fourth Street. The works started 50 feet from the southwest corner of Berry and Fourth and extended 65 feet south on Fourth, with a plant that extended back for 80 feet. The National Vinegar Works began about 1883 and was still in operation through 1895. The plant was one of the smaller vinegar works in San Francisco, consisting of about 6 large fermenting vats on a stone floor, yeast tubs, and hand-operated yeast presses, as well as a furnace, generator, and vats for storing mash.

Vinegar was important in California's early canning business, as it was needed for pickling. Frequently, vinegar works pickled vegetables on the premises, but this does not appear to be the case with the National Vinegar Works, whose proximity to lumber yards and mills suggests that they fermented the vinegar in the works and perhaps used kegs from the nearby cooperage (Pacific Woodenware & Cooperage at Sixth and Berry). By 1919 none of the frame buildings that clustered on the corner of Berry and Fourth Street were in existence. Stacks of lumber covered the site of the vinegar works, and the Southern Pacific spur cut through the site

of the saloon and vinegar works of the earlier decades.

Berry Street: Sixth to Fifth Street, on the North Side

Block #771 (Map D), on the north side of Berry Street from Sixth to Fifth, was in 1887 largely a vacant lot with three storage warehouses--all frame construction with skylights, only one-story tall. The first 570 feet along the north side of Berry was shown as vacant on the 1887 Sanborn Maps. Lumber was piled in Berry Street itself and a small "horse-shed" was built in the street.

Truman, Isham and Hooker Agricultural Implements owned the first frame warehouse, fronting 70 feet along the north side of Berry and running 125 feet towards King Street, where it was back-to-back with the Napa Valley Wine Company Warehouse. Irwin Truman, who had been a manager for Baker-Hamilton Agriculture Implements in 1879, formed a partnership with Alfred Isham and C. Osgood Hooker to make "hay-presses, all kinds of baling presses, wagons, buggies, steam engines, threshing machines and hardware" at their plant in San Leandro. The company offices were at 421-7 Market Street, and they had an agent in New York as well. Since they did not list the location of their warehouses, it is uncertain how long this site was occupied by the company beyond 1891. The 1919 Sanborn Maps indicate the entire Block #771 was covered with Southern Pacific Freight Shed "E," which is still extant. Similar freight sheds were described on the King Street Block #768 as "the **new** Southern Pacific Freight Sheds" in 1887.

Studebaker Bros. maintained a warehouse for carriages and wagons that fronted 70 feet on Berry Street and extended the full 250 feet to King Street, where by 1887 the Southern Pacific occupied the entire block with freight sheds and tracks that ran out into King Street with a siding at the rear of the Studebaker Warehouse. By 1886 there were 90 listings of carriage and wagon manufacturers in Langley's business directory as opposed to 33 in 1880, when the much larger listing (over 100) was for carriage-smiths who were kept busy repairing wagons and carriages not

MAP D
Sanborn, 1887
Berry St., Block 771

easily replaced. Hittell wrote in 1882, "While we consume a great number of wheeled vehicles, we produce but few, the oak used in the heavy and the hickory in the light wagons are equally lacking and we must import both from the Mississippi Valley, and it is found cheaper to obtain them for general use in forms prepared for putting together, if not already put together. . . . A great part of the value of a wagon is in the wheels, most of which are made up for us beyond the Rocky Mountains." (Hittell, 1882: 616) The situation remained much the same in 1890, when most of the parts of wagons were shipped in from the east. (Bancroft 1890: v. 7, 80) Since Studebaker Bros. did not list the location of their warehouses, it is not certain how long they maintained this one on Berry Street, but by 1917 it was all Southern Pacific freight yards, as previously described.

Standard Oil Company maintained a warehouse that extended the last 100 feet on the north side of Berry to Fifth and extended the full depth of the block (250 feet) to King Street, where they stored "refined petroleum in cased tins." The front of their warehouse on Berry was faced with brick and sheltered four large oil storage tanks and a small soldering house. By 1882 California was consuming more oil than it was producing--almost all of it classified as "illuminating fluid" or kerosene. The 4,194,000 gallons that came from wells in southern California (1881) was four times as much as produced in the preceding year, but Hittell predicted that in spite of this encouraging increase in petroleum production, California would never equal Pennsylvannia because "we have no vast coal deposits and the strata of the land along our coasts stand vertically . . . ." (Hittell 1882: 316-317) However, the oil in production already tended to be monopolized by four companies, of which Standard Oil was one, and the only one whose name we would recognize today. By 1919 Standard Oil had moved out of the Berry Street location in favor of Southern Pacific's expansion in freight lines.

Berry Street: Fifth to Fourth on the North Side

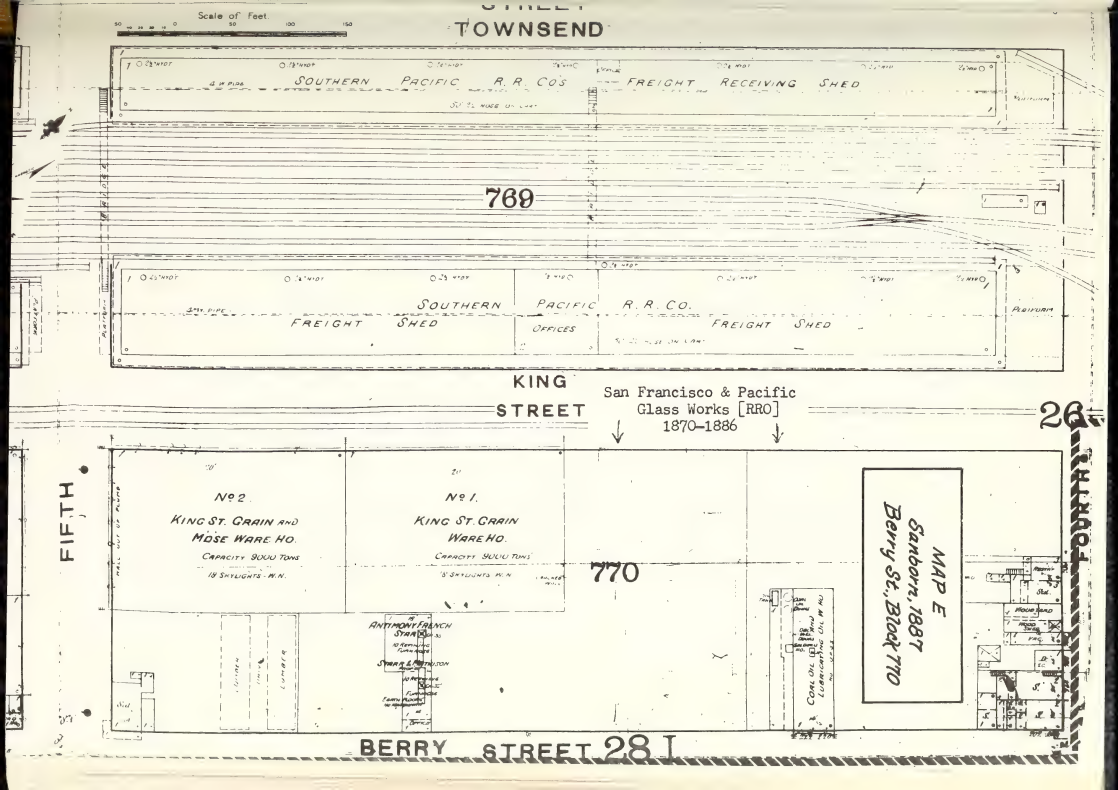
By 1887 **Block #770** on the north side of Berry from Fifth to Fourth was

largely vacant (Map E). The corner of Fifth and Berry had the typical neighborhood saloon with its covered porch that extended out into the street, rounding the corner. It was 14 by 20 feet, a one-story frame building with some small shanties alongside. About 100 feet down Berry towards Fourth Street there were stacks of lumber in an open yard that had no owner's name, but as it was directly across the street from the Truckee Lumber Box Factory we can assume it was probably part of their extensive lumber stacks.

A. M. Starr and Thomas Mathison owned the **Antimony Works** that were housed in a one-story frame building that occupied the site 250 feet down Berry Street on the north side. It was a narrow building (50 feet in the front) that extended some 100 feet back to the King Street Grain Warehouse #1. In 1887 it contained two furnaces and 20 refining casks on an unimproved earthen floor.

The antimony was a water-insoluable sulphate used in making explosives. In 1882 there was only one such antimony works in the United States and the entire output of two mining veins in Humboldt County, Nevada, was shipped to San Francisco, where it brought $16 a ton and was refined in the works on Berry Street. (Hittell 1882: 316) The antimony product was called "Star Regulus" and the factory was the oldest manufacturing business along Berry Street, established in 1873 before which Berry Street was under the waters of Mission Bay. Probably the ore was shipped by rail to Oakland and brought over by scows to Berry Street to what was the "front door" of the antimony refinery. By 1889 the factory had moved to 2160 Harrison Street. By 1915 the entire Block #770 consisted of freight receiving sheds with spurs down the center of the block. The Southern Pacific one-story frame structures are still there in 1977 and are used for general storage. The tracks have been removed between the rows of sheds. The entire area is paved with basalt blocks laid in sand.

The 1887 Sanborn maps show another 300 feet fronting on the north side of Berry to be vacant. This was part of the site occupied by the San Francisco & Pacific Glass Works from 1870 to 1886. Since Berry Street was in the early '70's the ungraded "back door" area for the glass works, the possibility of cultural deposits is considerable along this stretch of Berry between Fifth and Fourth. A description of the glass works


Scale of Feet.
TOWNSEND
SOUTHERN PACIFIC R.R. CO'S FREIGHT RECEIVING SHED
769
SOUTHERN PACIFIC R.R. CO.
FREIGHT SHED
OFFICES
FREIGHT SHED
KING STREET
San Francisco & Pacific Glass Works [RRO] 1870–1886
26
FIFTH
FOURTH
No 2. KING ST. GRAIN AND MOSE WARE HO. CAPACITY 90000 TONS 19 SKYLIGHTS - M.N.
No 1. KING ST. GRAIN WARE HO. CAPACITY 90000 TONS 15 SKYLIGHTS M.N.
770
MAP E Sanborn, 1887 Berry St., Block 770
ANTIMONT FRANCH STAR
STARR & MATTHEWSON
COAL OIL STORAGE
BERRY STREET
281

follows.

The San Francisco and Pacific Glass Works is deserving of special attention, as it is one of the only industries or activities along the C-1 alignment that may have left cultural debris of considerable interest to collectors.

The most important glass works in San Francisco during most of the period between 1865 and 1886 were the operations conducted by Carlton Newman at two locations near the foot of Fourth Street. The first plant (the San Francisco Glass Works) was located on the block bounded by Townsend, King, Third, and Fourth Streets (C-2 alignment). The much larger successor plant (the San Francisco & Pacific Glass Works) was located on the block bounded by King, Berry, Fourth, and Fifth (C-1 alignment). It is this latter location, with its possibility of an industrial dump at the back of the plant on Berry Street itself, that is of particular interest for this report. Below is a brief history on the company, followed by a description of the works backing Berry Street.

Background and Chronology: The Pacific Glass Works was incorporated in October of 1862, and the first bottle was blown on June 16, 1863, in the new factory located on ten acres of the Potrero fronting on Mission Bay. (Langley 1863: 26) The works employed 13 glassblowers from the East and forty-five to fifty local men and boys. This was the first successful glass works on the Pacific coast at a time when San Francisco alone was importing between 125,000 and 150,000 bottles a year. Bottles were made for pickles, fresh fruits, catsup, mustard, beer, medicines, and wines. Carlton Newman was employed as superintendent of the company in 1864. The directory address for the Pacific Glass Works is given as "Iowa & Mariposa in the Potrero" and a newspaper account describes its location as "on the northern slope of the Potrero near the Bay beach directly opposite the foot of Third Street." (**Alta:** August 25, 1863)

By July 15, 1865, Carlton Newman opened the San Francisco Glass Works on the southwest corner of Ritch and Townsend (San Francisco **Bulletin**, July 25, 1865), a location more commonly listed in the San Francisco business directories of the times as the "south side of Townsend

between Third and Fourth."

The new plant was owned by Carlton Newman and Patrick Brannan and consisted of "a frame building with an eight-pot furnace making all variety of white, green or black glass . . . the pot being by an ingenious invention patented by Mr. Newman, suitable for making all colored glass economically . . . . Forty men and boys turn out $6,500 worth of glass per month . . . . All kinds of white glass, druggist ware, chemists retorts, lamps, chimneys, tubes, etc., as well as carboys, demijohns, wine, soda and others. The varieties made at these works is endless including all kinds of glass except crystal." (Langley 1867: 46)

On July 24, 1868, the works at Townsend between Third and Fourth was partially destroyed by fire with damage estimated at $10,000. The two-story frame building was a complete loss, but the chimney and furnaces were left intact. (**San Francisco Times**, July 14, 1868) "At the time of their partial destruction by fire, engagements for druggists and other white glass had been made ahead sufficient to tax the producing capacity of the works for four and five months. Efforts are now being made by Mr. Newman to erect a new establishment of increased capacity, and more suitable, to the entire wants of the Pacific Coast." (Langley 1868: 46) The **Times** story indicates that the Potrero Glass Works were no longer in production, although the directory still continued to list the plant in location.

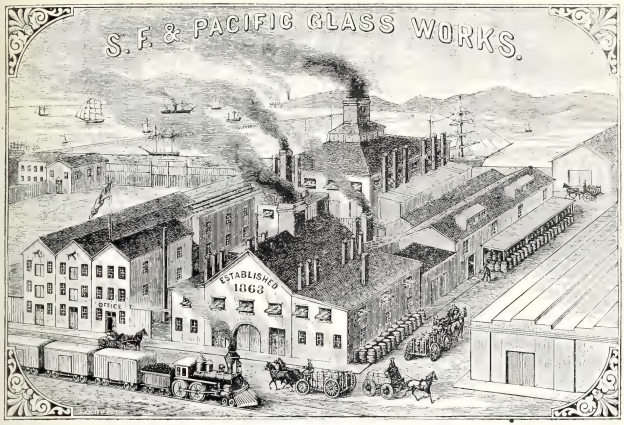
It would appear from directory listings that the San Francisco Glass Works reopened on the Townsend Street site, but this is not certain. What is certain is that an entirely new factory was in operation by 1870. The new location of the glass works was on King Street between Fourth and Fifth, the directory address being listed as "King, near Fourth" or "Foot of Fourth." Writing in April of 1871, Langley's chronicler said of the new location, "Here a large establishment has been erected during the past season . . . ." (Langley 1871: 54)

By now Carlton Newman was in partnership with Charles Duval at the new San Francisco Glass Works at the foot of Fourth. The company advertised, "Private moulds for all kinds of bottles." J. S. Hittell, writing in 1882, explained the expansion of the glass works: "In 1876 this company

ESTABLISHED 1863. INCORPORATED JUNE 9, 1876.

CARLTON NEWMAN, President.

Office and Works: King St., near Fourth, SAN FRANCISCO.



MANUFACTURERS OF

Green, Blue and Amber Glassware

C. NEWMAN'S IMPROVED ELASTIC BEDDERS, Patented January 26th, 1875. By reading the engraving, in the foreground will be seen a jar partially covered or engrossed in the glass, & the tule or cane the wicker-work. It will be seen that the bottle is covered with the tule reeds as well as the wicker-work or outer cushion, on which the rattan is woven. By this covering a jar is doubly protected, and made durable, thus from its liability from breakage. Its advantages are very many and obvious, that it needs no argument to prove it in effect. Those who use demijohns will find that the superiority it possesses over all other coverings is

THE CROOVE RING FRUIT JAR.

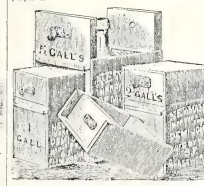
This Jar has been extensively used in the East for several years, and owing to its simplicity of construction, cheapness and reliability, has become one of the most popular Jars now in use.

NEWMAN'S

Improved Box Demijohn.

(PATENTED MARCH 30th, 1875.)

These boxed demijohns are the simplest, best and cheapest in the market. They are neat in appearance, compact, and securely packed, and are always ready for shipment by any conveyance, without danger of breakage. They will save 50 per cent. in freight. The demijohn in the box being glass, cannot destroy the flavor of the liquid, and, consequently should take the place of wooden kegs for all purposes.



PORCELAIN LINED.

Plate 11: San Francisco & Pacific Glass Works . . . This 1883 ad shows the works at the foot of Fourth Street with a ship at the backdoor of the other side of Berry Street. The tracks of the freight train were on King Street. The only known view of the glass works is this early woodcut. **(Langley's,** 1883)

Plate 12: Demijohns & Fruit Jars in 1879 . . . Tule reeds were used to cover demijohns to avoid breakage. Newman hoped that his newly patented process would replace wooden kegs. **(Langley's,** 1879)

[Newman's San Francisco Glass Works] bought the good-will, stock, and fixtures of the Pacific Glass Works and the two firms became one. The present company has two buildings, each containing seven pots, the combined capacity being 14 tons of glass daily and are constructing flint-glass works for the manufacture of druggist vials, lamp-chimneys, and press ware." (Hittell 1882: 525)

The plant was in operation at this site from 1870 to 1886. The 1887 Sanborn Maps show the site on Block #770 to be vacant but the King Street warehouse adjoining to the southwest still extant. Newman had moved the San Francisco and Pacific Glass Works to the northeast corner of Seventh and Townsend. A further expansion of the company with additional works on Folsom, Harrison, 14th, and 17th Streets ended with a tragedy on Thanksgiving Day, 1900, when the new 72-foot roof collapsed under the weight of some 180 men and boys, illegally gathered to watch the California-Stanford game a block away at Recreation Park. Eleven were killed outright and 78 badly burned from the furnaces. (**Call:** November 30, 1900) The business name did not survive San Francisco's worst accident of the era, and is no longer listed after 1901.

Description of the Site: The site of the San Francisco and Pacific Glass Works between King and Berry and Fourth and Fifth is established by the drawing in the advertisement in Langley's, 1883, as seen in Plate II. The precise location appears to be accurately established by the warehouse building on the right, which must be the King Street Grain Warehouse that is listed in the 1883 directory and is shown on the 1887 Sanborn map. (See Sanborn Map Block #770, Map E) The original building on this site is the one in the center foreground of Plate II. As noted above it was 78 feet on the front and 67 feet deep. At the time of its construction there was almost certainly no fill on Berry Street to the rear. This area would have been a mud flat at the lowest tides.

The occasion of commissioning the illustration is implied by the remarks quoted from J. S. Hittell above: "The new flint glass works have been completed and there are now three buildings with glass pots for various products." By this time Berry Street was a completed street and

presumably any dumping from the works would have been beyond Berry Street towards the channel. By the time the glass works moved out of this location (1886) the entire block between Berry and Channel Street was occupied by lumber yards, a box factory, and planing mill.

The size and importance of the San Francisco and Pacific Glass Works is indicated by Bancroft's description: "The consolidated firm is the only one [for California] recorded in the U.S. Census for 1880, with a capital of $75,000—2 furnaces, 7 pots, 125 hands, with wages of $46,000, material valued at $48,000 and an annual product of $140,000 . . . . The sand is brought from Monterey, the lime from Auburn, the manganese and oxide from other places in California." (Bancroft 1890: v. 7, 99) In other years the annual output of bottles on this site was valued as high as $240,000.

Using the data listed in the 1880 U.S. Census, a fair picture of the amount and kinds of material used during an average year at the glass works can be gained: "1,200 tons of mixing sand, 520 tons of soda-ash [most of which was imported from Europe], 55 tons of salt, 6,875 bushels of lime, 120,000 pounds of fire clay, 24,000 pounds of English fire clay, 56,000 pounds of German fire clay, 60 pots, 1,650 tons of coal, 375 cords of wood, 128 M. feet of lumber, 100 casks and barrels, 50 kegs of nails, and 72 tons of bales of straw/hay." (**U.S. Census Report** 1880: v. 2, 91)

Bottles produced on this site included a range that has previously been described as "including all kinds except crystal." In addition to the more specialized containers used by druggists, chemists, and the U.S. Mint, there is continuous mention made of "private moulds" for local manufacturers. (See Plate 12)

The interest of collectors in the product of this works is generally high. For example, an amber flash was "offered to the trade in 1876. The sharp taper from the shoulders to the small base caused it to be top heavy and consequently there were few buyers. These are very rare--25*. About 1880 the mold was restyled, eliminating much of the taper and the new bottle found favor with bottlers for many years and was distributed widely. They are common—3*." (Wilson 1968: 20)

The C-1 sewer alignment along Berry Street transects an area that

may have been used as a dump for industrial wastes or defective products during the earlier years of the operation of this factory. Two test borings along the sewer alignments made by Woodward-Clyde Consultants in July of 1976 bracket the probable location of any cultural materials from the glass factory. Boring #26 is at the northeast edge of the probable limits of any deposits from the glass works; boring #27 is beyond the southwest limits. Both borings show cobblestone paving over 18 to 25 feet of fill. The "mixed fill" towards the surface shows brick and shell fragments, gravel, wood, and other debris.

What is the probability of extensive deposits of waste glass products along the line of the sewer trench itself on the C-1 alignment? It was about two hundred feet from the back door of the original (1870) plant building to the line of the C-1 sewer trench. It is another three hundred feet from the sewer line to the Channel Street wharf line of 1887. At various times, with the successive expansion of the plant buildings to Berry Street, the grading of Berry Street, and filling to the channel, materials may have been disposed of in different places over an extensive area. Therefore, it is impossible to predict any precise spot where cultural materials are apt to occur in substantial quantity.

The **Municipal Reports** do not show when Berry Street, between Fourth Street and Fifth Street, was graded; however, the block between Fifth Street and Sixth Street was brought to grade in August of 1873. (**Municipal Report,** 1874) The Sanborn index Map of 1877 (See Map 4) shows the street between Fourth and Fifth in place. The most probable date for the grading of the street in this block is 1873, shortly before the grading of the block between Fifth and Sixth. In any event, a bottle dump exactly in the way of the alignment could not have existed for more than five years, 1870-1875.

Wave action prior to the grading of the alignment would have been almost nonexistent during most of the year, and even during the southeast gales of winter would have been less than it was before the construction of Long Bridge in 1865.

Refer to the section of this report on conclusions and recommendations for testing, monitoring, and mitigation.

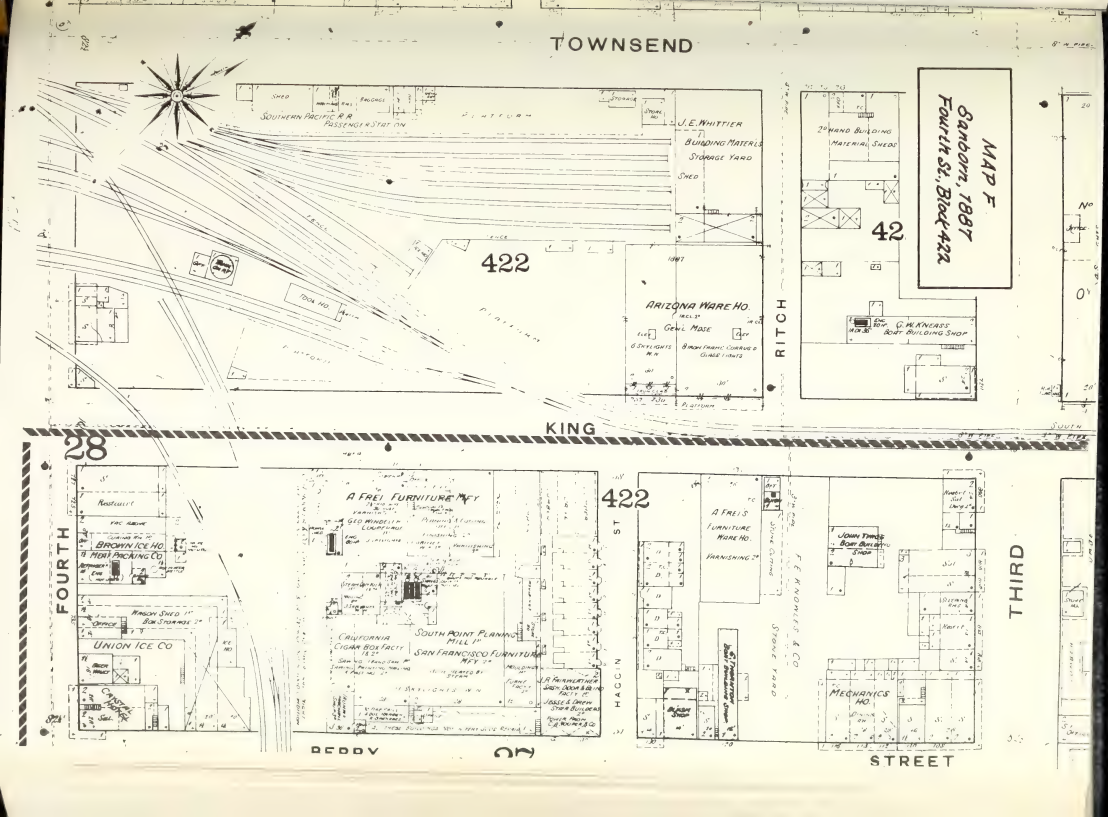
Block #770, Continued: A coal oil and lubricating oil warehouse occupied the site 220 feet west of the corner of Berry and Fourth. It was a one-story frame building fronting 25 feet along Berry and extended 125 feet deep. There is no directory listing for the warehouse owners. A low shed down one side of the building housed storage tanks and a soldering house in 1887. It, too, disappeared by 1915 and the site was occupied by the Southern Pacific's freight offices.

Clustered on the corner of Fourth and Berry was a complex of one- and two-story frame buildings that in 1887 were used for small shops—bakeries, laundries, cigars, grocers, dry goods, candy shops, and barber shops—all typical of small business operations on Fourth Street in the 1880's. #738 Fourth Street was the only "dwelling"--a one-story frame house only 11 by 14 feet. Woodsheds and a tiny wood yard adjoined the saloon and restaurant midway between Berry and King on Fourth. The rest of the site on Fourth Street on the west side between Berry and King was vacant by 1987. By 1917 it was part of the Southern Pacific freight office complex.

Block #422: Fourth Street from Berry to King [The only portion affected by the C-1 alignment is the strip of #422 fronting on Fourth Street. See Map F.]

The informal and ephemeral nature of the small businesses that lined the eastern side of Fourth Street makes research of this area more difficult—shops, saloons, and restaurants were apt to change their names, owners, and natures rapidly.

The **Crystal Hotel** that occupied the northeast corner slot on Fourth and Berry was a two-story restaurant and saloon, with upstairs sleeping quarters. Our earliest records indicated that Herman Kirchner was the proprietor of a restaurant at the northeast corner of Fourth and Berry. By 1887 it was called the Crystal Hotel and was now owned by Herman


TOWNSEND
KING
FOURTH
THIRD
HOOPER
STREET
RITCH
422
42
28
MAP F
Sanborn, 1887
Fourth St., Block 422
SOUTHERN PACIFIC R.R. PASSENGER STATION
J.E. WHITTIER
BUILDING MATERIALS
STORAGE YARD
SHED
ARIZONA WARE HO.
GEO. MASE
2nd HAND BUILDING MATERIAL SHEDS
C.W. KNEASS
BOAT BUILDING SHOP
BROWN ICE HO. & MEAT PACKING CO.
UNION ICE CO
A. FREI FURNITURE MFY
CALIFORNIA CIGAR BOX FACTY
SOUTH POINT PLANING MILL CO
SAN FRANCISCO FURNITURE MFY CO
A. FREI'S FURNITURE WARE HO.
VARNISHING
JOHN TIMES BOAT BUILDING SHOP
MECHANICS HO.
F.E. KNOWLES & CO.
422
BERRY

Schaffee. By 1891 Peter Hansen owned the property as a saloon and restaurant. The modest two-story frame building had the "south of Market" planked veranda that extended into the street around the corner. It survived the 1906 earthquake and was in operation in 1907.

Directly adjoining the Crystal Hotel was the beer vault belonging to the **Union Ice Company** which owned an L-shaped group of one-story frame sheds for wagons, box storage, and ice storage that fronted both on Berry and around the corner on Fourth, with the company's office at 735 Fourth Street. The Union Ice Company first appeared in Langley's **Directory** for San Francisco in 1882 and continued to operate from this location through 1907. The company was in the business of storing and delivering both cold beer and ice by wagons. Whether the ice came from the mountain lakes of California via the Southern Pacific Railroad or was artificially produced by refrigeration from the Brown Ice House and Meat Packing Center next door is a matter for conjecture. Ice was shipped in at the cost of $2 a ton to San Francisco in the early 1880's. (Hittell 1882: 568)

The **Brown Ice House and Meat Packing Plant** stretched along the next 60 feet of Fourth Street. As early as 1879 it was called the Mutual Ice Company and by 1883 it was the Mountain Ice Company. In 1887 the plant was called Brown Ice House & Meat Packing. By 1891 no ice company is listed at this Fourth Street address. The modest sized plant (only 60 by 75 feet) contained a smoke house out in back, a curing room to one side, and a refrigerated storage room on Fourth next to a very small office. Hittell notes that most of San Francisco's meat packing businesses dealt with curing hams and pork products rather than beef (ca. 1882) and he explained, "One noticeable peculiarity of the climate of San Francisco is especially favorable to the curing of meat. The atmospheric conditions, during a large part of the year, are analogous to those of the South American pampas, where meat exposed to the air will dry before it putrifies. During the dry season in San Francisco meat will keep several days without deterioration . . . . The use of artificial temperature has removed the only bar to steady advancement, and as our interior becomes settled, the supply of live stock will increase no faster than the demand."

(Ibid.: 538-9)

A restaurant occupied #725 Fourth Street in 1887, with no name or owner listed. An identical 25-by-90-foot building held down the northeast corner of Fourth Street around the corner on King. In 1887 this frame, one-story building was being used for a shop of an unspecified nature. The Southern Pacific tracks cut just in back of these corner buildings—100 feet deep into the frontage on King Street, and continued in back of the Brown Ice House and the Union Ice Company sheds until they crossed Berry Street.

By 1915 this strip of small businesses had disappeared under the Southern Pacific's parallel double tracks that ran the length of Block #422 (shown as #423 on the 1915 updated to 1919 Sanborn Maps of the same site) and dead-ended in front of Freight Shed G. Fourth Street had one 6" water pipe down the middle in 1887 and in 1915 two additional 12" water pipes are indicated running down the block from King to Berry.

Berry Street: Southeast Corner of Fourth Street Near the Channel [The C-1 alignment meets the western end of **Block #776** at the corner of Berry and Fourth.]

The 1887 Sanborn Map (Map G) shows the typical corner saloon at Berry and Fourth—in this case a two-story frame building about 30 feet square with a wooden covered porch that extended out into the street, down Fourth and around on Berry. The existence of a saloon on almost every corner on the C-1 alignment calls for a better understanding of the nature of "saloon life" in the 1870's on through 1900 in San Francisco.

Some of the workingmen who labored in and about the lumber yards, brick yards, refineries, haybarns, and planing mills boarded at lodging houses that were within easy walking distance of the Berry Street-Channel Street area went home for a proper hot lunch of large portions. But the institution of the "free lunch" served by every self-respecting saloon-keeper who wanted to "keep up the trade" made the schooner of steam beer, often as cheap as a nickle, the basis for an

MAP G
Sanborn, 1887
Fourth & Channel
Block 776-1612

Creek

STREET

Mission

FOURTH

1524

1612

1611

281

C-L Alignment

C-L Alignment is just off
this map at the corner of
Fourth & Berry

SHIPPING WHARF

PACIFIC PINE LUMBER CO. LUMBER YARD

J. W. WESSON

PATENT BRICK CO'S WHARF

POINT SAN PEDRO BRICK WHARF

LUMBER YARD

C.A. HOOKER & CO'S LUMBER YARD

immense free-loading lunch of pickles, hard-boiled eggs, corned beef, sausages, hard rolls, and cheese. Typically, "After the whistle blew at twelve o'clock every emporium would be crowded and the man at the counter would be sweating as he carved slice after slice of corned beef for the boys, and as the slab disappeared, another would appear in it's place." (Roxburgh: April, 1929) The lunch hour was an opportunity for filling up on substantial free food washed down with cheap steam beer and this explains why so many saloons were operating in the Berry-Channel Street area. Lunch at the corner saloon was the occasion for exchanging political views, as well, and Senator Thomas Maloney recalls the frequent and explosive fights that regularly took place in his father's saloon, **The Cuckoo's Nest**, which properly escorted the combatants out into the street to settle their differences, with wagers laid all around. (Maloney: December, 1932)

Just past the corner saloon and a small shop was the big two-story frame warehouse of the **Sierra Lumber Company**, which measured 200 feet along Fourth Street to the drawbridge and 100 feet across to a slip built right alongside the warehouse and up to Berry Street to accommodate lumber vessels. The construction date of this building is uncertain, but a directory listing appears in 1878 for a lumber depot at the northeast corner of Fourth and Channel for the Sierra Lumber Company. (Langley, 1878)

The Sierra Lumber Company was one of the earliest and largest of the California lumber companies with vast holdings in the Sierra Nevada. Originally called the Sierra Flume and Lumber Company (1875) it cut lumber in Butte County and floated the logs down the Sacramento River. With an immense flume system and terminals at Chico, Red Bluff, and Tehama, the company dealt mostly in sugar pine. The logs went by flume to the saw mills they owned. The lumber was then transported by rail and by boat to San Francisco for planing, finishing and sale. (Hittell 1882: 386) They advertised "sugar pine and yellow pine timber from the Sierra Nevada" in Langley's 1882 **Directory.**

All of the land across the channel was a vast lumber yard with holdings belonging to C. A. Hooper, the Pacific Pine Lumber Company,

and Pope and Talbot. This continued to be the case through the early 1900's. Although the Sierra Lumber Company continued in business, we can no longer find evidence of this large warehouse by 1910. The lot appears to be vacant although the lumber yards across the creek are still in evidence as late as 1919.

C-4 Alignment at Fourth and Channel: The same Sanborn Block Map (G) shows the corner at Fourth and Channel which is at the northeastern terminus of the C-4 alignment. In 1887 there was a small office at the creek for the tender of the swinging bridge. Closer to the end of the alignment is a saloon, dwelling, and shed cluster. The rest of the south side (C-4 alignment) was vacant at this time, except for the Pacific Pine Lumber Company wharf (called Division B Yard) which is north of the sewer line. In later years the C-4 alignment area contained extensive lumber yards, as noted elsewhere in this report.

BUSINESS ACTIVITY ALONG THE C-1 AND C-4 ALIGNMENT IN 1977—A STUDY IN CONTRASTS 1877-1977

The open Channel of Mission Creek still exists in 1977. The level of pollution in the water appears not so bad as Captain Klebingat described it as he remembered Channel Creek in 1901. (See Appendix) There are a few houseboats, mostly converted from various types of working barges into totally informal living quarters for people, plants, and dogs. The view from the decks of these Channel Creek shanties is of the underside of the freeway as it loops from the south towards the downtown sections of San Francisco.

Berry Street lies partially underneath the concrete superstructure of the freeway. No structures are left on the basalt paving blocks that cover the entire street areas. No people and few cars can be seen in what was once a busy scene of laborers, craftsmen, shopkeepers, hay and lumber schooners, and all the paraphernalia of such sprawling industries as lumber yards, shipbuilding yards, hay barns, planing mills, refineries--not to mention the coming-and-going of wagons and horses and horse-cars and buggies.

Facing the underside shadows of the freeway are the truss-roof wooden freight sheds of the Southern Pacific, some of which bore the legend "new" on the 1887 Sanborn Insurance maps. The Southern Pacific gradually developed more and more of the property along the alignment in the 1890's and increased the numbers of spurs and sidings to accommodate their booming freight business in the days when the railroad was still the

wonder of the age. Today the sheds are used for storage but the tracks are either silent or have been removed. Most of the freight that traveled on them now moves overhead on trucks on the freeway arteries.

The active business age of the Channel Creek and Berry Street area could not have begun before 1865 when this part of Mission Bay was gradually filled and King, and then Berry, and later (South) Channel Streets, could be properly called "streets." A careful survey of both city directories and coast survey maps indicates that our earliest business activities were not established until the 1870's. The Waldstein's Cigar Box and Packing Factory for example started in 1876 on 241 King Street and moved to the south side of Berry Street between Sixth and Seventh in 1879. The Turner-Kennedy and Shaw Lumber Company located yards on the south side of Berry near Fourth as early as 1879. The San Francisco and Pacific Glass Works was one of the first industries to make the move to front on King with a back door on Berry in 1870--when schooners could still pull up at the rear of the plant on the tide. The California Artificial Stone Company was founded on Berry as early as 1879. The Antimony Works on Berry may have been the oldest business that we have records for along the C-1 and C-4 alignment as it was built in 1873 on the north side of Berry Street, facing the bay, presumably to receive ore from schooners for refining.

The streets were graded and ready for laying down the necessary track for a horse-car line in 1878. "The Berry Street Railroad commencing at the intersection of the easterly line of Seventh Street with Berry Street, runs thence through Berry to Third and Third to Channel Street. Work was commenced during the Fall of last year [1877], was delayed somewhat by injunction obtained by property holders along the line, which having been dissolved, the work is being pushed vigorously and the road will be completed by date of this publication." (Langley 1878: 20) Even allowing for the optimism of the city booster spirit of the business directory this would seem to clearly pave the streets by 1878-79, which in turn partially accounts for the beginnings of more formal business type establishments from 1879 on through the 1890's.

The enlargement of the Southern Pacific holdings with more and

more tracks and spurs and freight offices had started in the late 1880's (see the 1887 Sanborn Maps D and F) and continued right up through the turn of the century. The presence of the wooden freight sheds belonging to the company testifies to the fact that the 1906 fire, following the earthquake, did not come further south than Townsend Street. (Geological Survey Map, 1906) But except for these remaining sheds, all of the old buildings from the heyday of Channel Street are gone.

CONCLUSIONS AND RECOMMENDATIONS FOR TESTING, MONITORING AND MITIGATION OF THE CULTURAL RESOURCES IN THE C-1 AND C-4 CONTRACT AREAS

An intensive historical study and archaeological analysis of archival materials describing the development of those parts of the Channel Street area on or near the C-1 and C-4 contract alignments, together with geological and historical profiles, has produced a relatively comprehensive picture of the structures that have existed in this area during the past century or so and the uses to which they and associated artifacts have been put. As a result of this survey, the authors feel themselves to be in an authoritative position to make substantive determinations regarding the nature of cultural materials that are likely to be encountered along the routes of the alignments under discussion.

The archival research has determined that there is virtually no possibility of encountering cultural materials from prehistoric, Spanish, Mexican, or early American periods (between approximately 2000 B.C. through 1852 A.D.), since during these periods the entire C-1 and C-4 contract alignments under discussion were submerged beneath the waters of the bay. While there is some possibility of encountering cultural material from the City Building Period (1853-1864), there is little chance that the collection of such artifacts would lead to an increase in either an archaeological or historical understanding of the development of San Francisco. Most of the cultural material associated with this period in the Channel Street area would be the remains of shipbuilding or repair activities and, as noted above, a great deal of archival and artifactual

information already exists from this period. In connection with the late nineteenth and early twentieth century periods, there is again little evidence to suggest that any accumulation of cultural material would be encountered along the routes of the C-1 and C-4 contract alignments that would add any depth or additional dimensions to a historical or archaeological understanding of the development of San Francisco. Both archival research and soil borings confirm that there is no evidence to suggest that fill used to bring the streets in the area up to grade was composed of material rich in cultural debris. Further, with one exception that will be discussed presently, there is no evidence that local industries in the Channel Street area may have disposed of materials of the type or in the manner that might enable archaeologists or historians to expand their knowledge of the San Francisco Bay area during the years between 1865 and 1920.

In connection with the 1865-1920 period, only two general locations can be identified in which it is probable that cultural material may be encountered in sufficient quantity and of the type that may make continuous on-site monitoring of construction worthwhile to archaeologists and historians. These two areas are: (1) the portion of the Berry Street alignment that transects the area behind the former location of the San Francisco and Pacific Glassworks. This area might contain bottles and other artifacts from between 1870 and 1875 that might be of interest to historians and historical archaeologists; (2) the area that involves the Fourth Street segment where the C-1 alignment follows the line of Long Bridge between King and Berry Streets and where the C-4 alignment terminates at Fourth Street on the south side of the Channel. Cultural materials associated with Long Bridge would include remains of the wharf-like structure itself, together with an almost endless variety of waste, discarded articles of utility, or personal items lost over or through the bridge.

Archival research on the development of the Channel Street area indicates that there is no need or justification for testing or mitigation prior to the commencement of construction of the C-1 and C-4 alignments of the Channel Outfalls project. With the exception of two locations

that will be discussed below, archival study plus the evidence of test borings lead to the clear conclusion that construction of the C-1 and C-4 alignments will in no manner have an effect upon any cultural remains that could in any way add to an archaeological and historical understanding of the development of the San Francisco area of the American West. Further, extensive testing or mitigation before the advent of construction activities would not be likely to produce any artifacts that would be a new addition to already existing collections from the periods under discussion.

As mentioned above, the only two areas of the C-1 and C-4 alignments that we recommend for continuous monitoring during construction are: (1) the portion of the Berry Street alignment that crosses the area behind the site of the San Francisco and Pacific Glassworks, and (2) the Fourth Street segment where the C-1 alignment follows the line of Long Bridge between King and Berry Streets and at the point where the C-4 alignment terminates at Fourth Street on the south side of the Channel.

We do not recommend test borings at these locations as the area of possible deposits is so large that individual borings would give us little information as to the existence or extent of any deposits of cultural materials. The area in back of the glass works in which industrial dumping could have occurred during the 5-year period before the street was paved measures approximately 180 feet x 20 feet on the alignment. The area along Long Bridge on Fourth Street measures approximately 380 feet x 20 feet on the alignment. The point is that, given the size of these two areas, failure of test borings to reveal cultural deposits would not remove the need for construction monitoring, while at the same time, if borings showed the presence of some cultural materials, we would still recommend the same program of archaeological monitoring. Thus, continuous monitoring of the excavation itself by the principal investigator and/or field assistants under his supervision is the recommended procedure in the case of these two locations.

Recommended Monitoring Procedures: A program of preconstruction

testing and sampling is not called for according to the evidence accumulated by extensive archival research. However, a systematic, well-ordered program of archaeological monitoring of construction activities must be devised and implemented, since no amount of archival research can account for the rare, unexpected, or accidental find of importance that might conceivably occur during the course of excavation and construction of the C-1 and C-4 alignments. While it is unlikely that such finds will be encountered, steps must be taken to insure the recovery, recording, and salvage of any significant cultural material in the event that any unexpected discoveries take place during construction activities. Since archival research has indicated little likelihood of encountering such accidental finds of significance to either historians or archaeologists, it is not necessary that monitoring be undertaken on a full-time or extensive basis. At the same time, it is essential that systematic and practical monitoring methods and procedures be developed in advance of construction to take into account any unforeseen eventuality.

First, competent archaeological and historical consultants must be employed by the city. These should consist of a principal investigator, one or more field assistants, as required, and a maritime and historical consultant with curatorial experience with the late 19th century artifacts associated with the history of California. The maritime and historical expertise may or may not be combined in a single person.

The principal investigator should have the following qualifications: a Ph.D. or equivalent in anthropology or archaeology, practical experience in historical archaeology in which he participated in at least three field seasons (of at least six weeks each), and directed at least one. The principal investigator shall have the responsibility of coordinating and overseeing the monitoring activities, of assessing (with appropriate consultation with the maritime and historical consultant) the significance and importance of any cultural materials encountered during the course of construction activities, and of recommending any mitigation measures that might be deemed necessary as a result of any archaeological finds that are made during the course of construction. The principal investigator shall be employed with the authority to recommend an immediate cessation

of construction activities in the event that archaeological finds of significance or importance come to light during the course of excavation and construction of the C-1 and C-4 alignments.

Any field assistants involved in monitoring activities must have the following qualifications: undergraduate or graduate-level training in archaeology and anthropology and at least one season (of six weeks or longer) of practical field experience in historic archaeology. The field assistants shall assist the principal investigator in monitoring activities. Much of the on-site inspection of construction activities and telephone liaison between the resident engineer and archaeological monitors may be undertaken by the field assistants. The field assistants shall be responsible for reporting their observations and findings to the principal investigator and for following his instructions while in the field. The job of field assistant shall not necessarily provide full-time employment for one or more persons on the C-1 and C-4 contracts.

The maritime consultant shall be an individual of unquestionable expertise about San Francisco's maritime history as well as nineteenth century ships, shipping, and related matters. The maritime consultant shall be called in to consult with the principal investigator regarding maritime matters that are beyond the technical level of expertise of the principal investigator.

The historical consultant shall be an individual of unquestionable expertise on the subject of Western North American history in general and the history of the development of the San Francisco Bay area in particular, and have at least three years curatorial experience in the field of West Coast, California, or San Francisco history. The historical consultant shall be called in to assist and advise the principal investigator about the relevance and importance of various artifacts that might be encountered during construction. Specifically, the historical consultant shall advise the principal investigator whether or not such artifacts are of significance or importance from a historical standpoint and whether or not they might conceivably contribute to a furthering of knowledge of the development of the Western United States in general or the San Francisco Bay area in particular.

As it may be necessary for the principal investigator and the historical and maritime consultants to appear at the site on short notice, these persons should be residents of the immediate Bay Area.

On the basis of the best available evidence, only two general areas within the C-1 and C-4 contract areas require continual monitoring during construction activities: (1) that portion of the Berry Street alignment that crosses the area behind the site of the San Francisco and Pacific Glassworks; and (2) the Fourth Street segment where the C-1 alignment follows the line of Long Bridge between King and Berry Streets and the point at which the C-4 alignment terminates at Fourth Street on the south side of the Channel. While construction is taking place in these localities, full-time archaeological monitoring (conducted by the principal investigator or one or more of his field assistants) should take place. However, other areas along the route of the alignment do not require full-time archaeological monitoring. Instead, these other areas can be adequately monitored by the following techniques.

Instruction of Resident Engineer and Crew Foremen: Before the beginning of construction, the principal investigator shall meet with the resident engineer and construction crew chiefs. The principal investigator shall explain the value of cultural and artifactual material in general and the specific importance of such material in the Channel Outfalls Project. The principal investigator shall instruct these individuals as to the nature of the artifacts that might be encountered and the locations at which types of material might occur. In the meeting (or meetings) it shall be made clear that ownership of all artifacts that may be collected from the construction sites is legally the property of the City and County of San Francisco, and that federal law requires the collection, identification and storage of such artifacts by a suitable public agency. Further, the resident engineer will be charged with the responsibility of making certain that this provision is complied with.

Monitoring, Sampling, and Collecting: The principal investigator, or one of the field assistants under his direction, shall maintain daily telephone

contact with the resident engineer, who shall provide up-to-date information as to the type of material that is being produced by the excavations. In addition, the principal investigator or one or more of the field assistants under his direction shall make periodic on-site inspections of all areas being excavated within the contract areas. The frequency of these visits shall be determined by the speed at which excavation and construction activities proceed. During monitoring, the principal investigator or the field assistant(s) working under his direction may collect random-grab samples of the material being excavated. The amount of material collected shall be determined by the principal investigator. These samples shall be sifted and artifacts shall be collected, recorded, analyzed, and stored. By using these procedures, it is believed that construction activities can proceed without undue impediment, but that any cultural materials of archaeological or historical significance can be observed, noted, recorded, and collected. Further, in this manner, the principal investigator shall be in a position to be in daily contact with the resident engineer and field assistant(s), and shall be in a position to immediately recommend a cessation of construction activities should a find of sufficient importance be made.

Recovery and Storage: All portable cultural materials collected during the course of construction and excavation for the C-1 and C-4 contract alignments shall be transported to the anthropological laboratories of the University of Santa Clara where, under the direction of the principal investigator, these materials shall be catalogued, recorded, and analyzed.

Materials or artifacts not suitable for handling in the University of Santa Clara laboratories shall be removed to space provided by the National Park Service in the Golden Gate National Recreation Area, where they will undergo similar treatment.

With regard to ultimate disposition of artifacts recovered, the City of San Francisco may make selections for use by such city-supported institutions as the San Francisco Maritime Museum. As it is required that all artifacts be permanently stored under conditions adequate for their preservation, it is recommended that the National Park Service

provide such facilities with the Golden Gate National Recreation Area.

The principal investigator with the assistance of the historical consultant shall have the responsibility of preparing an adequate report on all materials found during the course of construction (or during subsequent mitigation) and shall have this report ready for publication after the passage of a reasonable period of time (within two years of the cessation of construction or mitigation activities).

Procedure for Structures: In the event that the remains of structures be encountered during the course of construction activities, the following procedures shall be followed: 1) the principal investigator shall immediately ascertain the nature of the find and immediately recommend cessation of work, as he deems necessary; 2) he will act, according to his determination and the advice of other consultants if needed, to see that the structure is carefully measured, photographed, and recorded on the spot; or 3) determine with his historical and/or maritime consultant whether the remains are significant additions to the historical and archaeological knowledge of the development of San Francisco and decide whatever measures shall be taken to excavate or salvage the remains, either in whole or in part.

Procedure for Pilings: The alignment in the C-1 and C-4 contract areas may transect pilings remaining from wharf or other structures from the 1870's and later. These wooden pilings are not significant additions to the historical and archaeological knowledge of the development of San Francisco, nor would they be of value as relics for museum interpretation.

Procedure for Paving: Attention is called to present policy of the Department of Public Works of the City of San Francisco with regard to the historic basalt block paving that will be encountered, which is that the paving blocks removed are stored for subsequent city improvements. Diagrams will be made under the direction of the principal investigator to show how this paving was laid (in some places, it appears to be in two layers). It is not recommended that paving blocks removed in the

course of construction be replaced unless the Landmarks Preservation Advisory Board of the City and County of San Francisco determines that such replacement is important to maintenance of the historic character of the city or the area.

National Register of Historic Places: The stone street paving mentioned above does not qualify for the National Register of Historic Places, as it is by no means the earliest or last-surviving example of such paving in the city. However, we do suggest at this time that the Landmark Preservation Advisory Board survey the remaining streets paved by this method in order to determine what examples of such paving it may wish to preserve in original form.

The existence of a potential glass-works dump is far from proved by the archival survey, and the importance of any deposit cannot be proved conclusively until the excavation for the sewer is undertaken. Therefore, no recommendation with regard to eligibility for inclusion in the National Register can be made at this time.

Long Bridge, which can exist along the alignments only in the form of pilings beneath the bay mud and overlying fill (together with whatever planking and other structure that may remain), does not in our opinion meet a valid interpretation of National Register criteria.

Further, we do not recommend any site along the C-1 or C-4 alignments for inclusion in the National Register of Historic Places on the basis of this study.

Addendum: The conclusions and recommendations on the C-1 and C-4 contract were modified by subsequent agreements to include a program of preconstruction test borings under the supervision of Dr. Allen Pastron. His report, entitled **Report on Preconstruction Archaeological Testing Program for C-1 and C-4 Contract Areas** was produced in the fall of 1977. In the interests of historical development we have included the earlier C-1 and C-4 recommendations before their modification. But also in the interest of further understanding of the development of preconstruction testing techniques we include the following statement

from Dr. Pastron's report, cited above:

"The general scope of the preconstruction archaeological testing program along the C-1 and C-4 alignments was initially formulated in a meeting in San Francisco on April 20, 1977, between representatives of the Advisory Council on Historic Preservation, the Environmental Protection Agency, the State Historic Preservation Officer, the City and County of San Francisco, the State Water Resources Board, the Western Regional Office of The National Parks Service, and the Office of Archaeology and Historic Preservation--National Parks Service, Washington, D.C. The archaeological program which was devised at this gathering was formally outlined in an E.P.A. memorandum of agreement.

"The essence of the C-1/C-4 preconstruction archaeological testing program consists of the following procedures: (1) the retention by the City and County of San Francisco of a qualified Historic Archaeologist (hereafter referred to as the Principal Investigator) who is certified as meeting National Park Service standards by the Interior Department's consulting archaeologist; (2) the placement of ten mechanical test borings with a minimum diameter of 12" along the C-1 and C-4 alignments in locations to be designated by the Principal Investigator in concurrence with the Advisory Council on Historic Preservation, the Environmental Protection Agency, the State Historic Preservation Officer, and the State Water Resources Control Board. Five borings of 24" diameter are to be held in reserve to be implemented along the C-1 and/or C-4 alignments if, in the opinion of the Principal Investigator, the evidence obtained from the initial set of ten exploratory borings warrants their use; (3) the systematic collection, recording and analysis of all cultural materials encountered during the boring program; (4) the submission of a written report by the Principal Investigator which details the findings of the boring program and makes recommendations for further archaeological measures along the C-1 and/or C-4 alignments which are deemed necessary to mitigate any adverse impact to cultural resources by the construction of the proposed sewer alignments; (5) finally, the formulation by the Principal Investigator of an interim program of archaeological monitoring along the C-1 and C-4 alignments pending the submission and evaluation

of the above mentioned report by appropriate reviewing agencies." (Pastron 1977: 1-2)

The conclusions and recommendations included in Dr. Pastron's report on his field work may be summarized in his own words as follows: "The evidence of the borings indicates that substantial concentrations of cultural materials do not exist at any specific point along either alignment; rather, the artifactual specimens appear to be thinly scattered along both proposed sewer routes. . . . The evidence of the preconstruction testing program does not warrant the implementation of further test borings or other exploratory procedures along either the C-1 or C-4 alignments. . . . It is proposed that a program of archaeological monitoring of construction activities be undertaken along the C-1 and C-4 alignments of the Channel Outfalls Consolidation Project. The goals of the monitoring program are two-fold: (1) to detect the presence of and mitigate any adverse impact to such cultural materials whose existence along the C-1 or C-4 alignments was unforseen by archival research . . . The possibility, regardless of how remote, always exists and precautions must be taken in the event that even the most unlikely circumstance should come to pass. (2) The second purpose of the monitoring program would ensure that a systematic recording and collection be made of cultural materials that are expected to be encountered during the course of construction activities along the C-1 and C4 alignments."

Recommended monitoring procedures also evolved with slight modifications from the original C-1 and C-4 procedures described. These follow in the C-2 (King Street) report. These monitoring procedures were identical on all subsequent contracts covered by the report and therefore appear only once, in the King Street section of this larger report.

Appendix I

LONG BRIDGE . . . . From "Recollections of an Old Timer," South of Market Journal, June, 1926

In writing this my memory takes me back to the time of the big earthquake of 1868 in October . . . . At that time the city limits, as we termed it, did not extend far, for we boys of that district very rarely crossed Market Street and on the south side the waters of the Bay washed in some parts up as far as Brannan Street. There was quite a stretch of beach from Fourth Street extending to about Sixth Street, forming a half circle to the Potrero Hills, what we used to term at that time "South San Francisco."

A bridge, as you old timers should remember, spanned this neck of the Bay. It was called Long Bridge. The bridge was considered by Nimrods as the best smelt fishing grounds around the Bay. There was an extension about one-third of the way across called the Cattle Wharf, being used to land cattle there, and then, herded to Butchertown which was situated at Ninth and Brannan [Langley's Directory of 1871 describes the enactment of a new city ordinance to move Butchertown from Ninth and Brannan Street location out to the Potrero] over the old Mission Creek that ran up from the Bay . . . . This is now called the Channel. This creek ran with deep water at high tide as far as Sixteenth Street, and small craft would sail as far as the old Mission Woolen Mills at Sixteenth and Folsom Streets. [Directory ads of the 1860's for some Mission Creek industries, as well as all of the commercial "bird's-eye views" of the period, show small sailing craft on Mission Bay and up Mission Creek; but it is important to bear in mind that this navigation was governed by the tide.]

Now to go back to Long Bridge and cattle wharf. Here was a great place for Sunday and Holiday fishing. If one did not get there at

an early hour you hadn't a chance to drop your line. . . . Imagine the picture of hundreds of these poles projecting out about one yard apart. The fish caught were smelt. Put this in the above picture: hundreds of these silvery, graceful fighting fish being caught by all those who were fishing--at times two or three on a line. When they ran good, it was no trick to catch from 100 to 125 in a few hours. There were boat houses that rented boats to the more daring fisherman to go out into the Bay to fish. . . ."

Appendix II

THE TAR FLAT BOYS DIRECT A STRANGER TO LONG BRIDGE IN THE 1870's . . . A Reminiscense by James H. Roxburgh of San Francisco's Waterfront, South of Market Journal, August, 1933

A number of the boys from Tar Flat were discussing the question of where to go for a Sunday afternoon of enjoyment and a stranger overhearing the name Long Bridge, asked the boys how to get there. He was told: Go up Third Street, then walk south to the end of the street, then walk west half a block to a little street between Third and Fourth, and you will see a railroad drawbridge (a swinging bridge) which is opened or closed by one man with a hand-power windlass. You can cross this bridge unless some vessel is coming up the creek. There is another drawbridge a short distance further west, known as the Fourth Street bridge, which may also be open when you arrive there, but, by waiting a few minutes, you will be able to cross. After crossing, you are on Long Bridge. Now walk south. You will see the Mission Bay Warehouse at the end. First you come to Lee's boat house, then 'Jerry the Greek,' a boatman who rented boats at twenty-five or fifty cents an hour to the kids on Sundays. . . . These boatmen did a great business on Sundays for those who wanted to row out to Mission Rock where there was good rock cod fishing. . . . Well, down the wharf to the south was Pioneer Boat Club. . . . Next door to the club was a bath house run by John Trueworthy. The bath house was built over the water. Here the kids went for salt water swims instead of swimming in the bay and getting chased by the cops. It cost twenty-five cents for a bath and bathing suit. . . . Next to Trueworthy was the California Theater Rowing Club. The members were mostly actors and stage hands. . . . Next we have Bob Gobel's saloon where the boys would gather after a hard row on the bay. Here it was that you got a big steam beer and plate of clam chowder. . . .

We are now on a wharf on the outer end of the bridge which is about a quarter of a mile long and 300 feet wide, which at one time was known as the cattle-wharf, for it was here that the cattle, sheep, and hogs destined for Butchertown were unloaded and driven to old South San Francisco. Later this wharf was used by ships loading grain for Europe and there were many of them. Out in the bay you would see hundreds of the boys in boats fishing for smelt and rock cod.

Around the corner from Gobel's saloon was the Ariel Rowing Club. . . . They would bet their week's wages on a race, which would be either $13 or $15, and if they lost it would be a hard blow. But they were sports. Well, the next week they would ask their mothers if they could keep their next week's pay, and if she would they would pay her back next Saturday night. Then Sunday another race. If they won they would get dressed up and take the girls to the dance at Union Hall given by the Elite Club.

Appendix III

PAVING OF STREETS . . . . Experiments and the cut stone of Berry Street, from Langley's Directory of 1871, with Later Notes

From the earliest dawn of civilization, when mankind have congregated in cities the greatest desideratum of street-engineering has been to prepare such a kind of pavement as would nearest approach indestructibility and fulfill the many other requisites. Massive granite and lava blocks were anciently used, and perhaps many other devices of which we have no record. . . . There seems to have been a "dark age" of a very long period in the matter of paving, which recent studies promise to illuminate. During this long "dark age" the standard pavement has been of cobblestones, the rounded boulders of the glacial period. This superseded the elaborate work of the ancients, came to be considered the non-plus ultra paving, and the "car rattling o'er the stony street" was a punishment deemed unavoidable by those living in cities. Within the last quarter of a century reflecting men have concluded that the noise and unpleasantness of the cobble pavement could be avoided, and, as all immediately saw the desirability of a change, also that a great fortune awaited the successful inventor, many have entered the field and numerous experiments have been made.

In the elegant pleasure cities of Paris and Vienna, the clean noiseless asphalt pavement is the favorite. This is a concrete of gravel, cinders, broken rock, etc., cemented with bitumen, laid while in a semi-plastic condition, pressed and cut in grooves by enormous iron rollers. . . . The abundance in which bitumen exists in California has drawn to it the attention of the scientist and the inventor. . . . and it bids fair to resume its place in the arts it formerly held.

The Belgium (cut stone), Russ, MacAdam, and several kinds of wooden pavements have been tried. . . . A section of Battery Street, in

front of the Custom House, was laid with the Russ Pavement, and while lasting well is objectionable from its slippery surface, noise, and cost. The MacAdam is used on Mission and several other streets, and while answering well for country roads becomes too dusty in summer and too muddy in winter for a city like San Francisco. In 1862 the Nicolson wooden pavement was patented and became the rage, and it was believed that perfection had been attained. This was laid extensively in every city in the Union. . . . The rapid decay of the Nicolson Pavement soon destroyed its popularity and it is no longer laid in our streets.

The Stow Pavement, an invention of this city, has superseded the Nicolson, and bids fair to have an equal popularity. . . . This pavement is of blocks of wood, the grain or fiber standing vertical, resting on a smooth bed of sand, into which is driven a wedge made of board of the length of the block, holding the latter in place. Gravel, and hot coal tar, or bitumen, is spread on the surface and into the spaces between the blocks. It is simple, neat and easily laid, but the question of durability, contraction, and expansion, must be tested by time. . . . The "Imperishable Stone Block Paving Company" is a new organization of San Francisco, founded on a species of pavement. . . . This is concrete of 80% crushed rock and 20% asphaltum heated and mixed together, and while plastic formed under great pressure into blocks similar to those used in wooden pavement, but with corrugated sides, and is then laid on a bed of the same material as the blocks. . . .

Many of the streets of San Francisco were formerly planked but the rapid and irregular wear of this style of pavement has forbidden its extention or reconstruction. The pavements now [1871] in use here are the Cobblestone, MacAdam, Stow and Imperishable Stone. . . . The essentials of a perfect pavement are cheapness, durability, abundant supply of materials, smooth surface, while at the same time it affords a good foothold for horses, noiselessness, cleanliness, and that it may be easily taken up and replaced. [Recommendations of the city's investigating committee on pavement.] **Cobble Pavements**--Your committee recommends a thorough investigation be made of the hitherto cost of repairs of our cobblestone streets with a view to plan for repairing or replacing

them all. **Asphalt**--We recommend that the present popular plan of making sidewalks of this material be continued and encouraged. **Planking Streets and Sidewalks**--. . . that all sidewalks hereafter be laid down by property holders in this city within the fire limits, shall be of materials that will not decay. **Belgium Pavement**--This pavement [Basalt blocks] has never been laid in this city, and your committee hopes to see the experiment with Amador County rock tried by some property holders. **Preserving Wood**--From all the information gathered. . . Bethel and Robins processes are undoubtedly the best. . . . [The committee went on to recommend tests on city streets of various types of wooden block and asphalt combinations.]

****

By 1878 three quarters of the city budget of over a million dollars spent in paving was spent on basalt blocks, which proved to be as long wearing as the earlier cobblestones, while their flat surface was kinder to the hooves of horses and the wheels of vehicles than the rounded river stones. The **Municipal Reports** for the city of San Francisco trace the gradual replacement of the cobblestone streets with basalt blocks. As early as 1889, Fourth Street from Channel to Kentucky (on the south side of the Channel) was paved with basalt blocks by private contract. A year later, Sixth Street from Berry to King was also paved with basalt by private contract. (Langley: 1889, 1890) The early 1890's would appear to be the proper date for most of the basalt paving blocks extant on Channel and Berry today.

The origin of this "Belgium Pavement" is not clear. Some of the stone was quarried in Napa. (Langley: 1875-76) In more recent times the stone was taken from near Fairfield, California. However durable, it was never cheap, and gradually asphalt streets, as described in the foregoing essay on pavement in 1871, became the most practical means of handling the heavy traffic of San Francisco.

Plate 13: The Hay Wharf, ca. 1905 . . . The hay scow **Annie L.** carried a load of feed for the horse population essential to San Francisco's immense drayage business.

Plate 14: Pope & Talbot Lumber Yard . . . The big four-masted schooner **Okanogan** discharges Pacific Northwest lumber at Third and Berry. (Both S. F. Maritime Museum)

Appendix IV

CHANNEL STREET AND FILL ON THE SOUTH WATERFRONT. . . Captain Fred Klebingat Recalls His Waterfront Employment Dating Back to 1909

Channel Creek: The creek was an open sewer. In my day it was about the same as it is now except it's been cleaned up. We **knew** what the contents of the creek were! It was as thick as soup. They said that if you fell overboard you'd not last more than two minutes. They said if you took two gulps of that stuff it would be the end of you. In fact, it would turn white lead paint black in one night.

Channel creek was never a big river, not enough water. Captain Matson's first command was the scow schooner **Mission Canal**--probably named that when they dredged Mission Creek into a navigable channel. [The original creek went up to about Twelfth and Folsom.] There were no ships there in the Gold Rush days, there was no business for them there, no houses, no settlement, no streets. The creek was dredged probably in the '70's, I would guess. It was dredged to make room for lumber schooners, lumber yards, and was probably dredged inland to where it is now. The point is that it was dredged late in history.

The creek has several names: Mission Creek, Third Street Channel, Channel Creek, but it was universally known up and down the coast by sailors as Shit Creek.

Pope & Talbot's lumber yards were on one side of the mouth of the creek, the hay wharf on the other side. Then came the Third Street bridge. The bridge was on Pope & Talbot property. Morgan Oyster Company's schooner next to the bridge. If you dug down along the shores of Channel Creek you wouldn't find anything. Maybe a longshoreman's handtruck if one fell off the wharf into the creek. If any boat sank they would have gotten it out--the channel was too small and too shallow to have anything left there and obstructing it.

On Fill, Ca. 1910-1912: The fill behind the seawall was just like any dump. I was there when they filled in behind the seawall from Folsom to Second Street. From the land side, they dumped rubbish from buildings, pulverized bricks and old concrete. Horse manure and dead cats.

Most of it was city rubbish, not too much ballast in San Francisco. Ballast is something worthless--except it costs something to load. Could be clay, sand, rocks, sludge from a smelter, etc. Could be shingle (small flat rocks) from the beach at Callao. Could be boulders from Tahiti, called "Fatoua yams." Anything that's heavy, useless, and cheap.

I saw the five-masted schooner **W. H. Marston** when she was waterlogged at Folsom Street. They dumped her cargo of waterlogged hay bales and cement sacks behind the seawall for fill.

Appendix V

IDEALIZED SOIL PROFILE & TEST BORING . . . 1975-1976

The geotechnical investigation by Woodward-Clyde Consultants in 1975 resulted in production of the idealized soil profiles which are shown here in much reduced scale. In looking at the C-1 and C-4 contract areas and comparing them with historical data, it must be kept in mind that the profiles measure depth from the city base, which is 11.67 feet above the mean lower low water.

It will be seen that the excavation for the C-4 contract is entirely through fill except in the area near Seventh Street, where it enters the bay mud. On the C-1 alignment the excavation of Fourth Street reaches down through fill and bay mud into the underlying sands and clays. Along the rest of this alignment the excavation is largely through fill, but in most cases extends down into bay mud. The depth at which bay mud is encountered is generally below what would be expected from the study of historic soundings, such as those of the detailed 1857 coast survey manuscript chart (Map 2). The fill has apparently compacted the underlying strata (perhaps the layer of peat which is shown on some of the earlier city borings). There was almost certainly no dredging of the bay mud at any time prior to filling.

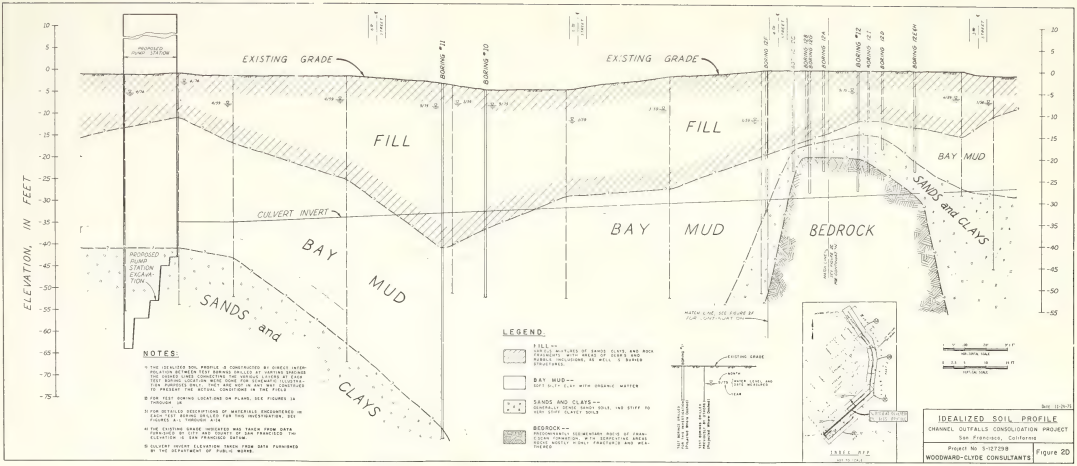
An examination of the logs of 22 borings made along these alignments by Woodward-Clyde and others reveals nothing unexpected with regard to the historical research results. Borings on Fourth Street do not show wood fragments--but none of the four we have examined was put down along the precise line of Long Bridge. Wood and "other debris" appear in borings on Berry Street, between Fourth and Fifth, close to the surface. The area is a likely site for a wharf structure prior to the filling of the block between Berry Street and Channel Street and the

dredging of Channel Street. Such a wharf or wharves would have been in use for only a few years in the early 1870's for loading or discharging from light-draft vessels.

Borings along the C-4 alignment also pick up wood fragments near the surface, where there would have been wharves in the late 1880's and after. At the same time, it must be borne in mind that the wood fragments encountered may in some or all cases be debris associated with the original fill. The fill itself occasionally shows other materials, such as brick fragments. The borings suggest that such materials are not present in large quantity. This information accords with personal observations of the excavation for the pump station between Berry Street and Channel Street near Seventh Street during March of 1977.

The fill appears definitely not to be composed, even in part, of household or industrial trash that might yield cultural materials.

It must, of course, be emphasized that the borings and profiles were made for soil test purposes, and while the Woodward-Clyde boring logs show attention to the existence of such materials as wood or brick fragments, most of the ealrier boring logs consulted do not mention anything but the composition of the soil. These profiles are primarily of interest in showing the relationship of the bay mud line to the depth of the sewer excavation.


ELEVATION, IN FEET
PROPOSED PUMP STATION
EXISTING GRADE
BORING #11
BORING #10
EXISTING GRADE
BORING #7
BORING #8A
BORING #8B
BORING #12
BORING #13
BORING #9
BORING #14A
BORING #14B
FILL
FILL
BAY MUD
SANDS and CLAYS
CULVERT INVERT
PROPOSED PUMP STATION EXCAVATION
BAY MUD
SANDS and CLAYS
BEDROCK
MATCH LINE, SEE FIGURE 19 FOR CONTINUATION
LEGEND
FILL -- MIXTURES OF SANDS, CLAYS, AND ROCK FRAGMENTS, WITH LENSES OF SILTS AND SANDS AND RUBBLE INCLUSIONS, RE MELL'S BURIED STRUCTURES.
BAY MUD -- SOFT SILTY CLAY WITH ORGANIC MATTER
SANDS AND CLAYS -- GENERALLY DENSE SANDY SOILS AND STIFF TO VERY STIFF CLAYEY SOILS
BEDROCK -- FRANCISCAN FORMATION, SEDIMENTARY ROCKS OF FRANCISCAN FORMATION, WITH SERPENTINE AREAS, ROCKS MOSTLY HIGHLY FRACTURED AND WEATHERED
EXISTING GRADE
+10.0 FT
+2.0 FT (MEAN LOWER LOW WATER)
-2.0 FT (MEAN HIGHER HIGH WATER)
-10.0 FT
TEST BORING DRILLED FOR THIS INVESTIGATION
TEST BORING DRILLED FOR PREVIOUS INVESTIGATIONS
INVERT ELEVATION
INDEX MAP
SCALE IN FEET
RIPRAP SLOPE

NOTES:

1) THE IDEALIZED SOIL PROFILE IS CONSTRUCTED BY DIRECT INTERPOLATION BETWEEN TEST BORINGS DRILLED BY VARYING SPACINGS AND DIRECTIONS. THE PROFILE SHOWN IS ALONG THE ALIGNMENT OF TEST BORING LOCATION WERE DONE FOR SCHEMATIC ILLUSTRATION PURPOSES ONLY. THEY ARE NOT IN ANY WAY CONSTRUED TO PRESENT THE ACTUAL CONDITIONS IN THE FIELD.

2) FOR TEST BORING LOCATIONS ON PLANS, SEE FIGURES 3A AND 3B.

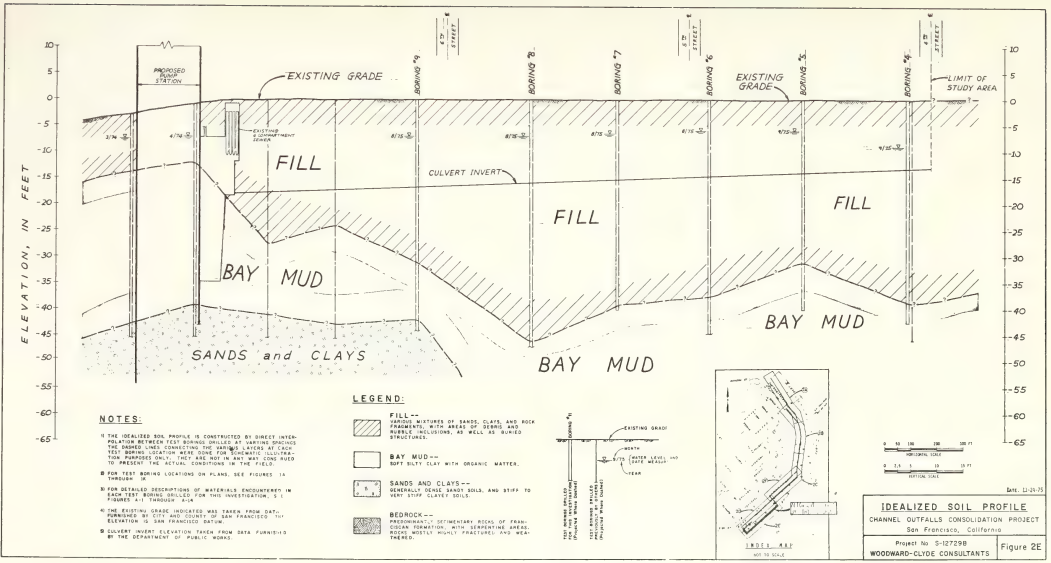
3) FOR DETAILED DESCRIPTIONS OF MATERIALS ENCOUNTERED IN EACH TEST BORING DRILLED FOR THIS INVESTIGATION, SEE FIGURES A-1 THROUGH A-14.

4) THE EXISTING GRADE INDICATED WAS TAKEN FROM DATA FURNISHED BY THE DEPARTMENT OF PUBLIC WORKS. SAN FRANCISCO DATUM ELEVATION IS SAN FRANCISCO DATUM.

5) CULVERT INVERT ELEVATION TAKEN FROM DATA FURNISHED BY THE DEPARTMENT OF PUBLIC WORKS.

Date: 12-26-71

IDEALIZED SOIL PROFILE
CHANNEL OUTFALLS CONSOLIDATION PROJECT
San Francisco, California
Project No. 5-127298
WOODWARD-CLYDE CONSULTANTS
Figure 20



NOTES:

1) THE IDEALIZED SOIL PROFILE IS CONSTRUCTED BY DIRECT INTERPOLATION BETWEEN TEST BORINGS DRILLED AT VARYING SPACINGS. THE DASHED LINES CONNECTING THE TEST BORINGS ARE SCHEMATIC. TEST BORING LOCATION WERE DONE FOR SCHEMATIC ILLUSTRATION PURPOSES ONLY. THEY ARE NOT IN ANY WAY CONSIDERED TO PRESENT THE ACTUAL CONDITIONS IN THE FIELD.

2) FOR TEST BORING LOCATIONS ON PLANS, SEE FIGURES 1A THROUGH 1K.

3) FOR DETAILED DESCRIPTIONS OF MATERIALS ENCOUNTERED IN EACH TEST BORING DRILLED FOR THIS INVESTIGATION, SEE FIGURES A-1 THROUGH A-14.

4) THE EXISTING GRADE INDICATED WAS TAKEN FROM DATA FURNISHED BY CITY AND COUNTY OF SAN FRANCISCO. ITS ELEVATION IS SAN FRANCISCO DATUM.

5) CULVERT INVERT ELEVATION TAKEN FROM DATA FURNISHED BY THE DEPARTMENT OF PUBLIC WORKS.

LEGEND:

FILL -- VARIOUS MIXTURES OF SANDS, CLAYS, AND ROCK FRAGMENTS WITH LOCALLY VARYING AMOUNTS OF RUBBLE, INCLUSIONS, AS WELL AS BURIED STRUCTURES.

BAY MUD -- SOFT SILTY CLAY WITH ORGANIC MATTER.

SANDS AND CLAYS -- GENERALLY DENSE SANDY SOILS, AND STIFF TO VERY STIFF CLAYEY SOILS.

BEDROCK -- PREDOMINANTLY SEDIMENTARY ROCKS OF FRANCISCAN FORMATION; WITH SERPENTINE AREAS. ROCKS MOSTLY HIGHLY FRACTURED AND WEATHERED.

DATE: 11-24-75

IDEALIZED SOIL PROFILE
CHANNEL OUTFALLS CONSOLIDATION PROJECT
San Francisco, California

Project No. 5-127298
WOODWARD-CLYDE CONSULTANTS

Figure 2E

Appendix VI

THE SANBORN MAPS . . . A Graphic Record of the Channel Street Area from 1887 through 1919

The fire insurance maps of 1887 have proven to be an invaluable research tool in studying the precise locations of buildings along the C-1 and C-4 alignments. The sewer line has been placed along the area traversed and is shown as a heavy dashed line.

The 1887 set of block maps is the earliest complete Sanborn Map collection for San Francisco we have been able to locate, thus far, from the collections of the New York Public Library and the Library of Congress collections, but an earlier 1877 Sanborn Index Map implies the possibility of discovering an earlier set.

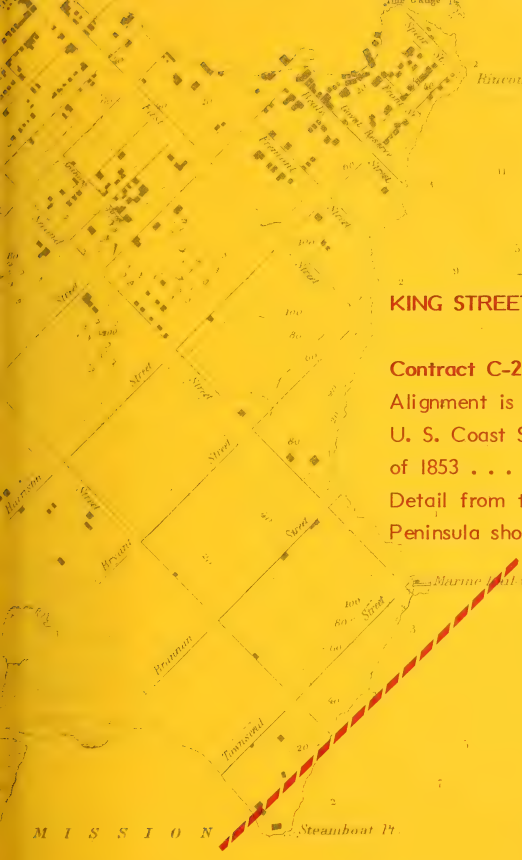
D. A. Sanborn was a civil engineer who was employed to map certain towns in Tennessee in 1866; he not long after decided to survey the major cities of the United States specifically to meet the specialized needs of insurance companies in identifying structures accurately. Incorporated in New York in 1902, the Sanborn Company continued its work in insurance maps until by now it has published large scale maps (50 feet to the inch) of every city and town throughout the United States with a population of 2,000 or more.

The maps included in this report (Maps A through G) are very accurate in details of construction. An examination of the working manuscript drafts for the 1899 Sanborn maps revealed that even more detailed drawings of an engineering-architectural nature were the basis for these larger block maps. Each building was originally rendered in every specification before being simplified and reduced for the published block maps.

The Sanborn Maps were brought up to date with printed pasters that were affixed to blocks showing changes of ownership or types of

structural changes. Periodically the maps were reissued as changes became too complex in San Francisco's expanding and changing community to be indicated by sticker updating. Thus it is possible to compare the 1887 Sanborn Maps on the Channel (C-1 and C-4) alignment with the updated 1891 set and the 1915, updated to 1919, and see the changes brought about by the changing technology of shipping (steam had replaced sail) and filled land (Channel Street was **all** that was left of the watery surfaces of Mission Bay), as well as the growth of one technology (the Southern Pacific expansion) and the replacement of another (lumber yards in place of the factories of earlier years). By supplementing these Sanborn Maps with the directories of San Francisco it is possible to reconstruct whole areas of business activity.

The 1887 Sanborn Insurance Maps of San Francisco are on microfilm at the Bancroft Library, as are maps updated to 1891 and 1893. The San Francisco Water Department has the printed sets in bound volumes for 1899 updated to 1905, and 1899 upated to 1912. A further set of maps on photostats on file in the San Francisco City Planning Department is 1915 updated to 1919. More recent volumes are in the Bancroft Library and the Department of Planning.



KING STREET

Contract C-2

Alignment is shown on
U. S. Coast Survey Chart
of 1853 . . .
Detail from the San Francisco
Peninsula showing Steamboat Point.

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SCOPE, OBJECTIVE, AND METHOD

The objective and directions for the study of the C-2 contract area differed only slightly from the general statement in the introductory section of the C-1 and C-4, or Channel Street, part of this report. However, the C-2 contract area crosses the natural, or original shoreline at Third and King Street, and at King Street 275 feet northeast of Fourth Street, and as a consequence of this geographical phenomenon Dr. Allen Pastron has given special attention to the archaeological potential of these two areas in the section of the C-2 report that covers the prehistoric period.

The archival research on the C-2 contract area has been integrated with and supported by analysis possible from the data obtained from previous test borings that cover the area transected by the alignment. These borings, while not carried out for the specific purposes of this study, furnish data about the nature of the fill and its depth, the possibility of the existence of cultural debris, and the depth and composition of soil strata.

Whereas the northern section of San Francisco's waterfront has been the study of considerable research, the southern section, of which the C-2 contract area is a part, has not been subject to the same careful observation and analysis. This report, together with the report covering the adjoining area of Channel Street and Berry Street (C-1 and C-4 contract areas), is the first effort to bring together the many disparate archives into a common focus. The Special Collections of the City of

San Francisco were of use in determining the precise dates of filling and grading of streets. Gladys Hansen, the curator of these city archives, has given us active assistance in searching these extensive city files for pertinent information. With her help it was also possible to corroborate the recollections of the **South Market Journal** articles with specific dates and addresses from the city directories published nearly every year since the very early 1850's.

The extensive photographic archives of the San Francisco Maritime Museum have made possible the visual analysis of the Steamboat Point area with the early shipbuilding activities. Thus, with the completion of the C-3 report on the Steuart Street area, it will be possible to gain a new understanding of the south waterfront of San Francisco from its historic beginnings through the years of cultural and technological changes. With the addition of Dr. Allen Pastron's archaeological analysis of the prehistory of the south waterfront, a coherent study of an area, hitherto lacking in scholarly research, is now possible.

In addition to specific information dealing with structures or deposits of cultural material that may occur along this specific alignment the report has included general information relative to the cultural history of the area in the interests of defining the types of human activity that may have resulted in deposits of cultural material.

Finally, in arriving at conclusions and recommendations relative to testing, monitoring, and mitigation of potential cultural resources in the contract areas, archaeological analysis of the historical data has been undertaken. Recommendations are made in the light of the probable nature of cultural resources, sound archaeological field methods, and the realities of the sewer construction process.

Scope of the Construction Excavation: The new sewer along the King Street (C-2) section of the Channel Outfalls Consolidation Project will be of concrete box construction and involves an excavation approximately 22 feet wide and ranging in depth from approximately 31 feet below city grade at the Fourth Street end to approximately 24-1/2 feet below grade at the Embarcadero. The invert culvert grade of the sewer is uniform in

slope.

The C-2 contract excavation will extend from a point 50 feet east of the eastern pavement line of Fourth Street to approximately the western pavement line of the Embarcadero. The alignment runs down the south side of King Street, 19 feet from the pavement line. Currently superfluous railroad tracks of the Southern Pacific and Belt Line will be removed in the course of construction. No buildings of any sort will be impacted.

THE KING STREET AREA: SUMMARY . . . Historic Cultural Resources

Contract Area: The King Street historic survey area covers the Channel Outfalls Consolidation Project alignment on King Street from Fourth Street to the Embarcadero (Contract C-2). This preliminary summary and conclusion will be followed by the detailed report.

Pre-history: The King Street alignment crosses the original San Francisco Bay shoreline at Steamboat Point between Third and Fourth Streets. As a result, it is always possible that there may be cultural remains of Indian inhabitants, although there is no present evidence that such finds may be encountered.

Spanish, Mexican, & Early American Period (1776-1850): The Steamboat Point-South Beach area was completely unimproved prior to the Gold Rush of 1849. The first map showing any structures located on or near the C-2 alignment is the 1853 Coast Survey Chart (based on survey information completed in February, 1852).

Gold Rush Period (1851-1863): Henry B. Tichenor constructed the marine railway at the foot of Second Street on the south side of Townsend Street in the latter part of 1851. Tichenor's "Drydock" was the first repair of its type on the Pacific Coast; his associated interests in lumber, warehousing, and shipping were characteristic of the whole development of the Steamboat Point-South Beach area in this and subsequent decades.

The magnificently detailed 1857 Coast Survey Chart of the city of San Francisco shows, besides Tichenor's ways, a number of small craft ways on the beach between First and Second Streets (west of Brannan), and what appears to be a substantial marine railway at King Street between Third and Fourth. This railway no doubt identifies the location of John G. North's shipyard, which in 1858 was located "on the south side of Townsend between Third and Fourth." North, Domingo Marcucci, Patrick Henry Tiernan, Henry Owens, and others built vessels at Steamboat Point during the '50's and into the 1860's.

Filling In and Building Up (1864-1869): During the 1860's South Beach and Steamboat Point developed rapidly, and by the end of this period nearly all of the King Street alignment had been built up. Among the notable activities of the period that impinge on the C-2 alignment were the construction of the Civil War monitor **Camanche** at Third and King, the installation of the works of the San Francisco Gas Light Company on either side of King Street at Second in 1865, and the development of the extensive Pacific Mail Steam Ship Company wharves, shops, and warehouses between First and Second Streets and Brannan and King. The end of the King Street alignment is almost exactly in the center of the Pacific Mail Company Basin, and the Embarcadero alignment C-3 cuts right through the location of this most important of San Francisco's ocean steamship wharves.

Late Nineteenth Century (1866-1900): Probably the last vessel built at Steamboat Point was the Central Pacific's giant freight car ferry **Thoroughfare**, which was designed to operate out of the car ferry slip built at that time at Second and King. King Street remained well known for boat-building however, as both G. W. Kneass and John Twigg maintained establishments in the mid-1880's at Third and King Streets. Lumber yards, furniture factories, and planing mills, warehouses, and the works of the Pacific Oil and Lead Company lined the street between Second and Fourth.

The Pacific Mail operation no doubt continued to contribute cultural debris to the project sewer alignment down to the period between 1904

and 1908 when the two sections of the seawall between Brannan and Townsend and the foot of King Street were built.

Conclusions: The invert profile of the C-2 alignment reaches bedrock or original near-shore mud bottom along its entire length. The several test borings made in 1975 for determining subsurface conditions do not seem to indicate any great riches of cultural materials in the fill, though boring #23 at the foot of Third and King brought up glass and wood fragments about where one would expect to find remains from the shipbuilding activity of an early period (1854-1864). There can be little doubt that a substantial amount of casually disposed-of cultural materials may be encountered during the excavation; however, archival research has revealed no evidence to suggest that artifacts or materials that may be discovered would add to our knowledge of shipbuilding during the latter half of the nineteenth century or to our knowledge of the cultural history or technological history of San Francisco.

Historical analysis of the C-2 contract alignment shows that the excavation will not impact any known structures or sites that would appear to be eligible for inclusion in the National Register of Historic Places. Detailed recommendations for testing and monitoring will be found at the conclusion of this report.

PREHISTORIC PERIOD . . .2000 B.C. - 1776 A.D.

A general outline of the prehistoric period of the San Francisco Bay Area appears in the previous section on the C-1/C-4 contract alignments of the Channel Outfalls Consolidation Project. Therefore, no repetition of the general nature of aboriginal culture in the San Francisco Bay area is necessary here. We shall refer to the prehistoric period only from the specific viewpoint of the possibility of encountering cultural materials from this period along any portion of the C-2 alignment.

The C-2 alignment intersects the original shoreline of the San Francisco Bay at two places in the Steamboat Point area: approximately 300 feet to the northeast of Fourth Street and again near intersection of Third and King Streets. These are the only two areas along the alignment that could possibly contain prehistoric traces (in the form of artifacts, settlements, habitation refuse, or skeletal materials), since the other segments of the alignment rested beneath the waters of the San Francisco Bay prior to filling activities that began in the nineteenth century, or was land cut down to city grade in the 1860's. It must be added that according to existing evidence the possibility of encountering a prehistoric site at either of the two above mentioned possible locations is exceedingly small.

A search of the archaeological records at the University of California in addition to a review of the published literature has not indicated any evidence of a prehistoric site ever having been encountered or recorded by anyone on or near the course of the King Street alignment.

Of the 25 prehistoric sites recorded in the University of California archives as having existed in the County of San Francisco, none were located on or in the immediate vicinity of the C-2 alignment. Yet, whenever the original shore of the bay is intersected, there always exists the possibility, however slight, that a prehistoric site might be encountered and this possibility cannot be ignored.

Since there are few prehistoric sites known in what today is the City and County of San Francisco, the occurrence of such a find would be of considerable interest. Encountering (for example) a large shell mound would provide archaeologists with an opportunity to learn a great deal about the social, economic, and cultural patterns of the aboriginal Californians who lived here. Therefore, adequate measures must be taken before the beginning of construction to ensure that if there is such a site, regardless of how unlikely it is that one will be encountered, it will be discovered, recorded, and salvaged. These measures will be discussed more specifically in the section concerning preconstruction testing procedures at the back of this report.

AP 1~ U.S. Coast Survey, 1853

AP 2~U.S. Coast Survey, Ms. Soundings, 1857

THE SPANISH, MEXICAN, AND EARLY AMERICAN PERIODS . . . 1776-1850

King Street, along the C-2 Channel Outfalls Consolidation Alignment, is the easternmost of San Francisco's streets that transect the original shoreline area that came to be known as Steamboat Point. The south end of the alignment, at Fourth and King Streets, is about 275 feet out into what was Mission Bay, in an area that would have been an exposed mud-flat on occasions when the tide fell below the mean lower low base line. Moving north along King from the shore, the ground rose to an elevation of about 20 feet on the west side of the street near Third Street, and at this point descended steeply back into the water on the east side. From Third north to Second Street the alignment is close to the original shore—a bluff that fell off from Townsend Street—in what was 0 to 3 or 4 feet of water at low tide. At the foot of Second, the bluff turned westward away from the King Street line at almost a right angle and the bay depth increased sharply. The intersection of King Street and the present-day Embarcadero (about 500 feet north of Second Street) was at the 3-fathom line shown on the Coast Survey Chart of 1853 (see Map 1). It should be noted that this chart, based on survey work completed in February of 1852, shows the shoreline in its entirely natural state, with the exception of whatever slight filling and grading was associated with the marine railway at the foot of Second Street.

An examination of the manuscript map of soundings made of the Coast Survey in 1857 (Map 2), when the shoreline was still unaltered in

this area (except for boat and ship ways and small additional work at the foot of Second), confirms that the alignment from Third Street almost to Second is through what was very shallow water. Much of the bottom mud would have been exposed at the lowest tides. This configuration approximately agrees with the "Idealized Soil Profile" prepared by Woodward-Clyde, consultants, in 1975. Though the "Idealized Profile" shows bay mud reaching to the invert profile at King and the Embarcadero, this mud deposit would date from some time after the building of the Pacific Mail Dock in 1867, as the original bottom of the bay (in 1857) was deeper.

The whole of the Steamboat Point-South Beach area was "off the beaten track" during the Spanish and Mexican periods and the America period up through 1849. There is no evidence that the waters southeast of Rincon Point were used as an anchorage, and certainly there was no compelling logic for such use so long as Yerba Buena Cove—equally protected from the strong and continuous westerlies of summer and vastly safer in a southeast winter gale—was uncluttered with piers and shipping. Only the curiosity that leads excursionists out on to points of land could have brought European inhabitants of colonial San Francisco out to the bit of Steamboat Point traversed by King Street, as the place had no attraction in itself and was remote from any reasonable route between the Mission and Yerba Buena Cove or the Presidio. As late as September of 1848 Captain Harrison of the **Belfast** could draw an extremely detailed map of the settlement at Yerba Buena without showing any structure of any kind out toward Rincon Point or Steamboat Point. Indeed, a notation he later made on the map, along the beach from California Street to Rincon Point, reads: "Many races were run on this beach at low water by the owners of Mustang ponies. It was also quite a fashionable walk on Sundays to Rincon Point affording a prominent and most beautiful view of the City and Harbor." (Harrison 1848) If the strollers looked the other way, they would see South Beach stretching away to the bluff and hill at Steamboat Point, and if they walked the half-mile further to the top of that 111-foot rise, they would have been afforded a fine view (across the mudflats, salt marshes, and sand hills) of the mission, two miles to

Plate 1: View of San Francisco, May 30, 1850 . . . John Wodehouse Audubon climbed Nob Hill to make this pencil sketch of the gold rush city and its shipping. So far, only one building can be seen on the skyline of Rincon Point, on the far side of Yerba Buena Cove. However, shipping and masts of ships can be seen beyond the point, near the C-2 alignment, and there may have been minor activity at this out-of-the-way location as early as the date of this sketch. (Bancroft Library)

the southwest.

This "South of Market" scene was to change rapidly with the huge immigration of 1849. By the fall of that year, "Happy Valley" (around the foot of Mission Street) was spotted with tents, as can be seen in a widely circulated view of San Francisco drawn in September of that year (see a later copy of this view in Scott 1959: 27). Less than a year later the "Happy Valley" area is filled with frame structures and there are some buildings on the Yerba Buena Cove side of Rincon Point as can be seen in the detailed drawing of the city and the shipping made by John Wodehouse Audubon on May 30, 1850 (Plate I). From his vantage point on Nob Hill he could see steamboats and sailing vessels anchored on the other side of the point at South Beach. Only one building appears on the skyline of Rincon Hill. It is possible that at this date small vessels were being beached for bottom cleaning along South or Steamboat Point.

GOLD RUSH PERIOD . . . 1851-1863

We have somewhat altered the standard definition of the gold rush period (usually 1848 to no later than 1856) in the case of the Steamboat Point-South Beach area of the King Street alignment in the interests of the actual course of development in this particular place. As pointed out above, there was no significant activity here during the first gold rush years; again, Coast Survey Charts of 1852, 1853, 1857, and 1859, together with written descriptions and photographs, show that it was not until after 1863 that there was any significant modification in the configuration of the shoreline, even though there was indeed substantial activity that might have resulted in the deposit of cultural materials.

Three particular locations along the alignment call for specific consideration: (1) the point approximately 275 feet northeast of Fourth Street, where the alignment crosses the original shoreline; (2) the intersection of King and Third Street, which is again where the alignment transects the original shore, and where there is definite historic evidence of shipbuilding activity, both here and for another 600-700 feet northeast along the shoreline; and (3) the area 100-300 feet northeast of the intersection of King and Second Streets, where vessels were readied to be taken up on Tichenor's Ways.

The South Shore: The discussion of shipbuilding in the Channel Street section shows that Domingo Marcucci, Patrick Henry Tiernan, and Henry Owens (and possibly John G. North) built a number of sidewheel and

sternwheel steamboats of medium to large class at "Fourth Street" locations in the late 1850's and early '60's. The Coast Survey Chart of 1859 (Map 3), which with respect to structures and topography is based on 1856 information, shows what appears to be a shipway 100 feet northwest of the alignment on this south, or "Fourth Street," shore of Steamboat Point.

It must be emphasized that these early shipbuilders built even the largest class of riverboats—the equivalent of the "floating palaces" of the Mississippi and Hudson—in starkly unimproved surroundings. All that was required for a "shipyard" was a sliver of flat land big enough to set up the vessel and proximity to water. Materials and craftsmen and the "master carpenter" were really what constituted the shipyard. As a result, shipyards appeared and disappeared as contracts were gained or business was bad. As another result, deposits of materials associated with these operations will be debris resulting from construction itself, and not from any fixed installation. Whether or not any vessels were built on the precise alignment on the south shore of Steamboat Point we cannot determine—but it is entirely possible.

Foot of Third Street: This address, used specifically by John G. North, the most famous of the Steamboat Point builders, in directory listings for 1856-1858 (Coville 1856-57; Langley 1858), is near the intersection of Third and King Streets—if we are to take it literally. But the reference to his being located "on the south side of Townsend between Third and Fourth" in 1858 in his biography published in the **Overland Monthly** (February 1895: 123) suggests that the marine railway or shipway seen approximately 50 feet east of King Street and some 200 feet south of Third Street on the 1859 Coast Survey Chart (Map 3) was his. The discrepancy in addresses is accounted for by King Street being only a survey line at this date (with one building right in the middle of the "street"), making the south side of Townsend the appropriate point of reference, while at the same time the directory reference to "the Foot of Third" would lead one surely to his premises.

The photograph shown as Plate 2 may show this location, though

P3~U.S. Coast Survey, 1859

it was taken after North had left for the Potrero. In any event, it is an early view (1862?) of the bluff and beach of the east side of Steamboat Point, with two shipbuilding operations in full swing. If this photograph does show the former North yard in the foreground, with Tiernan building barges for the Colorado River in the middle distance (North 1899: 145-53), then the activity is on or within approximately 50 feet of the alignment; if it is further to the northeast, between Third and Second Streets, then the shipyards are 100 to 200 feet west of the alignment.

Foot of Second Street: Tichenor's Ways & Ship Repair: By 1851, although there were suddenly hundreds of vessels of all sizes and types operating into and out of San Francisco, there was no facility in the city for hauling or drydocking vessels for bottom-cleaning, caulking, coppering, or for accomplishing other below-the-waterline repairs. A small schooner might be beached at high water and worked on when the tide ran out, but the tidal range at San Francisco is inadequate to use this time-honored technique for vessels drawing more than five or six feet of water. As has been suggested above, South Beach and Steamboat Point would have been a likely place to do such work; the slope of the shoreline below high water was about right for the purpose.

To meet an obvious need, Henry B. Tichenor constructed a marine railway at the foot of Second Street in 1851. A marine railway, then as now, consisted of tracks laid out into the water from above the high tideline. Tichenor's original railway may have used railroad iron, or may have employed flat iron on top of the timber ways. To haul a vessel out of the water, it was maneuvered onto a stout iron-wheeled cradle that was drawn up the inclined railway by a windlass or capstan (See Plate 3).

Henry B. Tichenor had begun his business life in the wholesale-commission-house business in New York. As reports of the great profits being made in this line of business in San Francisco became common knowledge in New York, Tichenor formed a partnership with Firman Neefus, who would remain in New York while Tichenor operated at the San Francisco end. This was a classic and successful pattern of

commission-merchant operations during the gold rush period, when skillful and immediate decisions (under conditions of slow paced communication and fast paced business) had to be made at both the New York and San Francisco ends of the 18,000 mile lifeline to California.

Tichenor arrived in San Francisco in April of 1850, achieved early success, and quickly expanded into the coastal shipping trade and lumber business. This involvement with all classes of shipping may have suggested to him the idea of the profits to be made from a ship repair facility. He bought the lot (actually a small block) at the northeast corner of Townsend and Second at one of the famous--or infamous--"Peter Smith sales," probably that of June 14, 1851. His "mug-book" biography (presumably supplied by him) states that he paid $2,700 for this block, the highest figure paid for any of the properties at that sale; this was indeed a bargain, for a couple of years later William Jewett paid $40,000 for the water lot of about the same size diagonally across the intersection of Second and King. (Denny 1853) Tichenor's site was an excellent one for the purpose, being partly land and partly water. Again, it is at this place on Steamboat Point that deeper water is closest to shore and the length of the railways might therefore be least. The 1853 Coast Survey Chart shows the railway as extending due east from the southeast corner of Second and Townsend; the 1857 Chart shows a slightly different angle, suggesting that the railway may have been rebuilt in the interval.

Bancroft says that the railway was completed in the summer of 1851, when the brig **Sidi Hammet** was hauled and her bottom coppered (Bancroft 1890: vii, 79). From this date down through 1868 that railway was in constant use for ship repairing, and shipbuilding was also undertaken on the property. Shipbuilding or major reconstruction was accomplished alongside the regular railway, employing other shipways laid for the purpose. Tichenor sold the property to the Central Pacific in 1868, but the ways may not have been removed immediately. Patrick Henry Tiernan said that he built the freight-car ferryboat for the railroad, the **Thoroughfare**, at the foot of Second Street in 1870, which suggests that the work was at the Tichenor site. This was the first of the big double-ended sidewheel car ferries of the period; she was 266 feet long

Plate 3: (above) **Tichenor's Ways in 1864 . . .** The marine railway at the foot of Second Street began operations in 1851. Ships coming on to these ways, like the brigantine **Hesperion,** would be readied for haulout at a point directly over the C-2 alignment. (Bancroft Library)

Plate 2: (left) **Steamboat Point ca. 1862 . . .** The shipyard in the foreground may be John G. North's at about Third and King Streets. (S. F. Maritime Museum)

and carried 16 loaded railway cars. (North 1899: 152)

The size of the **Thoroughfare** not only shows the class of wooden steamship that could come out of Steamboat Point yards that had none of the elaborate structures and facilities that we today associate with the idea of "shipyard" (and which in most cases never even appeared in city directories), but her very length says something about improvements on King Street and the likelihood of cultural materials buried in the way of the C-2 alignment. Filling from the foot of Tichenor's ways out to King Street anticipated construction of a vessel this long, and remains of at least this operation are most likely along the alignment. The eastern end of the original marine railway was a short distance (100 feet) west of the proposed alignment, and what might remain from the early 1850's associated with the Tichenor operation would consist of materials deposited overboard from vessels being readied for placement on the cradle or just departing it. This would include any manner of ship or marine repair gear, from items of rigging (such as blocks) through materials (such as spikes or chain), to lost or discarded tools and things associated with personal use (such as pails or bottles), together with the bewildering variety of things that can get "lost overside" in the course of such a frequent and long-continued scene of marine activity.

An interesting note regarding another type of cultural remains that has been much discussed in connection with the Channel Outfalls project in general is that the vaguely ship-shaped outline on the south side of Tichenor's railway (seen on the widely circulated 1857 Coast Survey Chart) is specifically identified as a ship on the manuscript soundings map of 1857. The location is distinctly to the west of the alignment, and it is hard to imagine any long-term function of such a hulk at a marine repair yard. Probably the ship was in the process of being stripped and broken up when the survey crew decided to use it as the visual reference for some of their lines of soundings. In any event, there is no sign of any "installed" hulk in subsequent photographs.

With regard to the total level of activity associated with Tichenor's Marine Railway, from 1851 until 1855 it appears to have been the only "dry dock" facility available. In 1855 the floating dry dock at the new

U. S. Navy Yard at Mare Island was assembled from parts shipped out around Cape Horn and made available for commercial use as well as Navy repair work. This dock could lift much bigger ships than Tichenor's and would have been convenient to medium and large-sized steamships. Also in 1855 a floating dry dock is advertised in the **Alta California** (December 31) at the foot of Lombard Street. Presumably, such a dock would have competed directly with Tichenor; however, no floating dock on the north waterfront appears in photographs or views of the early 1860's. John North moved from Steamboat Point to the Potrero in 1862, and he built a marine railway that appears to have been of greater capacity than Tichenor's--certainly it was as large. After this date, a number of yards that could handle vessels up to the size of the typical two-masted coastal schooner appeared at the Potrero and Hunters Point. Then, in 1867, the Merchant's Dry Dock Company installed its first floating dock at North Point, and the California Drydock Company built its graving dock--capable of handling any ship in the Pacific--at Hunters Point. It was certainly time for Tichenor to sell out. But it would appear that between 1851 and 1867 he had the better part of San Francisco's drydocking business for ships of less than the largest class, and it would be a most conservative estimate to say that a thousand vessels went up and down those ways.

FILLING IN AND BUILDING UP . . . 1864-1869

Under the title "City Improvements," the **Alta California** of May 2, 1864, reported the following: "This city is growing southward. A year ago [1863] the waters of the southern bay dashed against a bleak and lonely front, stretching from a rocky barren and folorn ridge, for a distance of a half a mile or more. Since then what a change! The foot of Third Street is now the terminus of the **Omnibus Railway** and the hotel whose enterprising proprietor, Farr, has done so much for excavating that thoroughfare to bring cars to the bay waters, is reaping a rich reward for his exertions. Steamboat Point which was but four years ago almost uninhabited waste is now covered with manufactories, shops, saloons, and dwellings. The 'resurrected' **Camanche** lies in an adjoining yard and hundreds of loyal citizens visit the spot daily to see her, to be sure only in **pieces**, soon to be put together again in her proper element. Just eastward on the foot of Third Street the **Citizens Gas Company** is engaged in an immense enterprise, which when fully carried out must involve an expenditure of one million dollars. This company's land is bounded by Townsend, Second, and Berry. They have two lots of 275 feet. In the rear of this front is a precipitous bank of soft rock and dirt presenting a face towards the bay of 100 feet in height. From this cliff the earth is obtained for filling up the water lots below. At the present [May 2, 1864] some hands are employed in working into the cliff and carting the rock and dirt to the beach below. Laborers are industriously engaged in 'cribbing' the water front lots and filling in from the bank.

"At the foot of the cliff and in front of the main bank a great gasholder 115 feet in diameter is being built. This is some 23 feet below the surface. . . . This pit is on a lot between King and Townsend Streets. The manufactory and coal stores are to be between Berry Street and the waterfront. The largest vessels can come up to the wharf, where the coal is landed and passed through the manufactory, and then delivered into the gasholders. The main manufactory building is in dimensions of 170 feet by 60 feet on King Street—a portion two stories and the remainder one story, to be built of brick. It is to have one iron-framed roof covered with slate, iron doors and windows, and is fireproof.

"Upwards of 1,500,000 brick, manufactured in Sacramento have been contracted for by the company. . . . One hundred men are employed which number may be increased as work proceeds.

Nature has done much for this enterprise. The precipitous cliff overhanging the bay affords ample materials in way of stone and earth for filling the water lots whilst the shallowness of the waters permits the powerful steam engines to keep otherwise submerged lands dry." (See Plate 4)

King Street—Grading, Planking, and Paving: The natural progression for the improvement of San Francisco streets involved several steps. First came grading—cutting down the hills and filling up the water lots to bring streets to the city grades established in 1853 by Milo Hoadley and W. P. Humphreys. The datum plane was identified by a nail at 6.7 feet above the ordinary high water mark in a wooden post at the boat landing at Pacific and Davis Streets. (Hittell 1878: 437)

In some cases, a prior step in street improvements meant staking the submerged water lots with wooden fences or cribbing the lots with wooden stakes and rocks to mark the property lines in an uncertain water environment. Next, came the building of redwood or brick sewers, and then, planking of street crossings, and the streets themselves; this was apt to be followed by paving the street with either cobblestones or paving blocks. Finally came the addition of curbing and sidewalks. These were the usual steps taken sometimes by the city, and sometimes by the

Plate 4: The Gas Works, 1865 . . . The San Francisco and Pacific Gas Company's works on King Street, near Second, was the first big enterprise along the C-2 alignment, and its construction was the occasion of the first big filling operation that created the street. The plant is at the left, the gas holder (still empty in the spring of 1865) at the center, King Street between them.

Plate 5: The Second Street Cut, 1869 . . . Designed to open up a new thoroughfare to the King Street waterfront and the projected railroad ferry landing, the cut ruined the most fashionable residential section in the city. (both views, Bancroft Library)

property owners who stood to gain the most from these improvements. In this latter case, the city then "accepted" the streets as conforming to some general standards. The progress of the various streets is described in detail in the San Francisco Municipal Reports from 1856 up through the early 1880's. The city engineer published the dates of contracts awarded for public street improvements and the costs to the taxpayers in the annual reports.

It is important to understand the progressive development of King Street grading and paving and bulkheading activities, because once the paving was in place no artifacts of even the most casual nature were apt to become implanted directly in the street. The crossing of Third and King was close to the natural shoreline in the 1850's. The foot of Second Street was the scene of marine activity from the early days (1851) of Tichenor's marine railway up through the 1890's. (See the discussion under "Gold Rush—Foot of Second Street" in this report.) The area from King and Second to the Embarcadero was not filled until the seawall was in place in 1908. (Dow 1973: Appendix)

In 1864, King Street was described as being just at the city baseline at Second and King, and at Fourth and King. Third and King measured 2 feet above the city baseline at the time. (Mun. R. 1864-65) This meant that enough filling and grading had taken place to make King Street passable. In the spring of 1865 Long Bridge was constructed along Fourth Street out to the Potrero and this construction was recorded in the Municipal Reports by listing the number of "piles and caps" required: "February 1, 72 piles crossing Berry and Fourth; March 17, 63 piles and caps crossing Fourth and King; April 6, 72 piles and caps crossing Fourth and Townsend, and [finally] 234 piles and caps crossing Townsend to King Street." (Mun. R. 1865-66)

Following the progress of the development of King Street a little further, we find that by January of 1865 a redwood sewer was put down on Fourth Street from "Brannan to the Bay." Wooden planking was added by February of 1865 on Fourth Street from King Street to Berry, and by the end of March of that year, the crossing at Fourth and King had been planked. By April, Fourth Street from Townsend to King was planked.

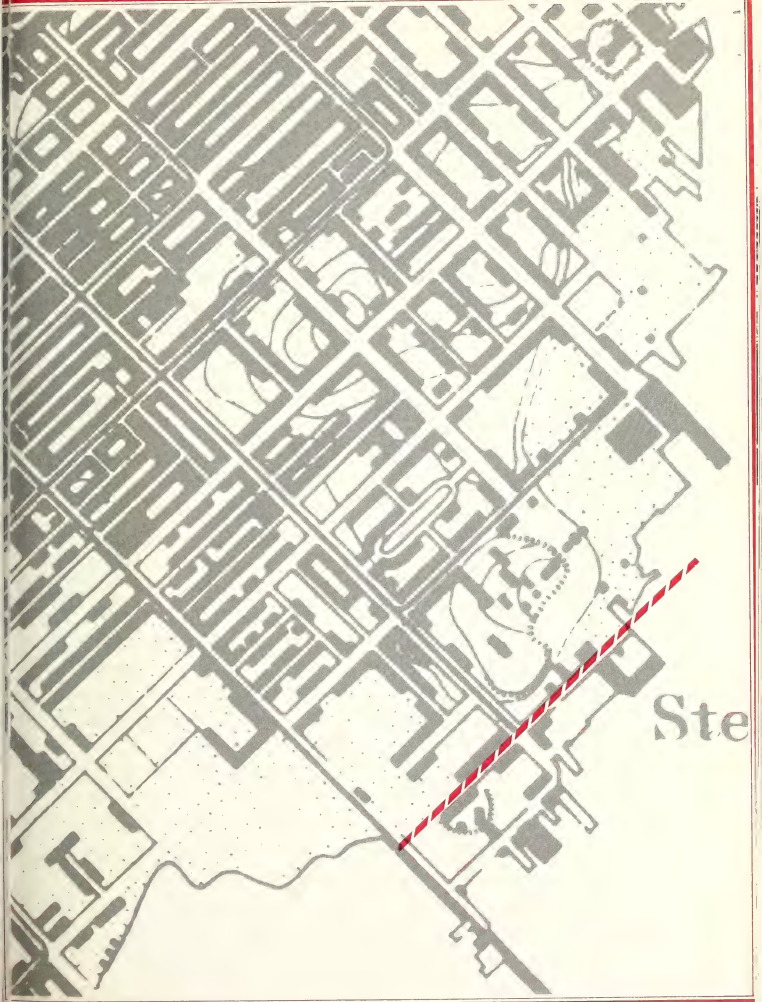
As early as 1870, Third Street from King to Townsend and to Brannan had been paved with Nicholson pavement. (Mun. R. 1865-1872)

The laying down of San Francisco's city streets met with considerable criticism. Cronise, writing in 1868, describes the plight of San Francisco's streets:

> It is unfortunate that the city was originally projected with so little regard to regularity, to the natural inequalities of surface and its future wants as relates to width of streets, reservation of grounds for parks, public buildings, etc. . . . Not a street in the city conforms in its course to the cardinal points of the compass; the whole town standing askew—its grand plot being made of a patch-work of surveys executed at different times without object or system. . . . In adjusting the street grades these grave mistakes have been further multiplied in an utter disregard for the topography, whereby dangerous precipices and unsightly chasms have been formed in the very heart of town. . . . The greater portion of the earth removed in excavating the streets and grading lots has been used to fill in the tide lands, of which there is a large scope lying east of and in front of the city. Many of the sand-hills have also, through the aid of the steam-paddy and a resort to temporary railroads been removed and employed to fill in the water lots along the city front. . . . In the southeastern part of the city large areas of the shallow waters bordering Mission Bay have, within the past few years, been filled in with solid earth, temporary bulk-heads have been constructed to retain the mass in place where necessary. Upon these new made lands many large warehouses, brick stores, and other permanent structures have been erected. (Cronise 1868: 645 ff)

The Second Street Cut: At the time that Cronise was writing, Second Street was not yet cut through. Rincon Hill was bounded by Third Street to the southwest and faced San Francisco Bay towards the east. The 1869 Coast Survey Chart (Map 4) shows the contour lines of Rincon Hill just northeast of Third and King. The best addresses of the early 1860's were on the heights of Rincon Hill. An idea of the numbers of moneyed and powerful folk who lived there comes across in this nostalgic bit, published as a recollection in 1933:

> Upon and around Rincon Hill were grouped the artificially beautiful gardens and proud homes of the Ralstons, Peter Burnetts, Folsoms, Shermans, Becks, Hastings, Shafters, Talbots, Selbys, Magilis, Lathams, Donahues . . . and other prominent in the affairs of State, in business and in civic



AP 4–*U.S. Coast Survey, 1869*

> life, and in the professions. . . . Essex and Hawthorne were well favored streets on the hill, which held an agreeable savor of early Victorian manors and halls. Its homes were sheltered, too, by the higher and steeper hills, that were considered too inaccessible. . . . Second Street, too, was in its glory then as the shopping street and approach to Rincon Hill and South Park, whose women did not disdain to come afoot to shop among the milliners, jewelers, hairdressers, mantle-makers, and ladies' tailors with which gay Second Street was crowded along its few blocks. Then came rumors of cutting through Second Street to the heart of Rincon Hill. When rumors materialized into legislation, an exodus began. In 1869, work was begun on the Second Street cut. Summer houses, gardens, fountains, coach houses, stables, and even Rincon Hill's drawing rooms were left almost teetering on the cut's unsightly sides. (Fitzhamon, **Chronicle**, 1933)

The unsightly appearance of the Second Street cut can be seen in Plate 5, taken in 1869 while the horse-drawn carts were still engaged in carting off the thousands of cubic yards of sand and dirt that left arbors, gardens, cypress trees, and houses devastated. (See Appendix for a precise description of how the Second Street cut was made.) The photograph illustrates the precise reason why Rincon Hill was quickly deserted by the wealthy and the fashionable of the times. There was, of course, a financial reason for the Second Street cut.

During the 1867-68 session of the State Legislature an act was passed authorizing the San Francisco supervisors to modify the grade of Second Street. At the same time the Legislature passed an act granting 30 acres of submerged land in Mission Bay south of Channel Street to the Western and Southern Pacific railroads for terminal facilities. It was believed that the Southern Pacific planned to come through Second Street to a terminal at Market Street. Although Rincon Hill residents numbered among them men powerful enough to stop the Second Street cut, it was reckoned at the time that there were "wheels within wheels" and that "some reckoned leaders against the project may have been secretly assisting it, or at any rate, not really fighting it." (Fitzhamon 1933)

The cost of cutting down the hills and bringing streets up to grade, putting down wooden planking at the crosswalks, and shoring up planked sidewalks, putting down redwood and brick sewers was more than high for the times. After the staggering changes made in the year 1869, the

chronicler of the city's improvements added a warning for the thoughtful: "Thus it will be seen that the enormous sum of $1,566,321.56 has been expended in this one year improving the sewers of the city. The cost of such work in 1856-7 was $47,433. Think of this, ye Pioneers!" (Langley 1870: 15)

The Last Days of Steamboat Point: Filling in and building up overcame the old shoreline of Steamboat Point in the latter half of the 1860's, changing entirely the nature of this strip that comprises the C-2 alignment. This period was the last part of the shipbuilding era that had given Steamboat Point its name.

It was here that the monitor **Camanche,** sent out from New Jersey during the Civil War—in pieces—was assembled by Peter Donahue's Union Iron Works gang. The ship carrying the parts of this Ericsson-designed monitor sank at Hathaway's Wharf during a gale on November 16, 1863 (Hathaway's Wharf, at the tip of Rincon Point, can be seen in the background of Plate 2 and Plate 8).

The **Camanche,** first ironclad warship of the Pacific, was intended to prevent Confederate raiders from attacking the port of San Francisco at a time when California and Nevada gold and silver was bankrolling the Union cause. The sinking of the **Aquilla,** with the disassembled monitor aboard, was sufficiently celebrated to produce all kinds of comments in the local press, including the **Alta's** notation that the **Aquilla** was the greatest of war vessels because "she was the first to sink one of our monitors." (**Alta,** Nov. 17, 1863) The sunken **Aquilla,** alongside Hathaway's Wharf, appears as one of the small features in the birdseye view of San Francisco, dated 1864, that appears in the earlier report on Channel Street.

Efforts to raise the **Aquilla** and her precious military cargo were beyond the means of local salvagers, despite such novel ideas as raising her by balloons (**Alta,** Dec. 5, 1863). But a New York diving party brought her up before the middle of 1864. Peter Donahue chose the location at the foot of Third Street (Third and King Streets) for the assembling of the **Camanche** with its armor plate up to eleven inches thick around the turret. The launch of the **Camanche,** on the 19th of November, 1864, was

Plate 6: Launch of the Camanche, Nov. 14, 1864 . . . The monitor **Camanche,** shipped out from New Jersey in pieces, was put together on this ways at about Third and King by Peter Donahue's Union Iron Works mechanics. C. W. Watkins must have assembled a group of the builders and friends for this photo, for by launching hour thousands filled the grandstands and all other vantage points. (Bancroft Library)

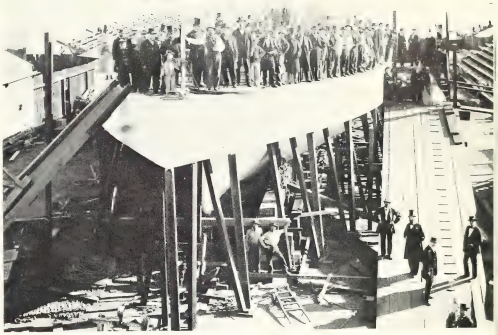
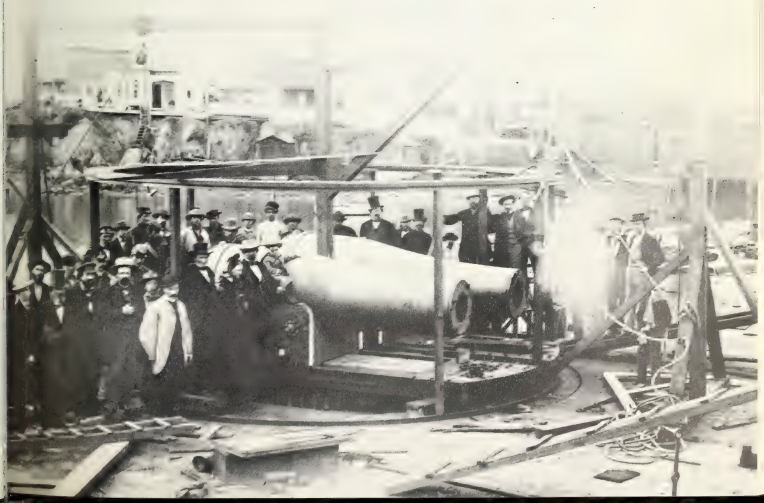


Plate 7: Steamboat Point, Dec. 1864 . . . In the foreground the 15-inch guns are being readied for the turret of the **Camanche.** More relevant to the C-2 alignment is the motley collection of frame structures in the background that lined the eastern side of King Street from Third to Fourth. The rise upon which these structures stood was far above present grade; thus, materials deposited were completely removed from their site and would be found here and there, in fill to the south and east of the point. (Bancroft Library)



the greatest civic event ever held at Steamboat Point. Bret Harte, a regular contributor to the monthly **Californian**, composed one of his comic takeoffs on famous poets of the era (Tennyson, in this case) in memorial to the occasion. He called it "A Lay of the Launch," and the verses are of some historical interest in that they identify clearly the time of day and state of the tide of this historic occasion. Following are some few lines:

My heart is wasted with my woe,
Camanche;
In vain I strove to see the show,
Camanche;
I did not see thee launched at all,
Camanche;
The crowd was large--the gate was small,
Camanche.
I stood without and cursed my fate,
The time, the tide that would not wait,
With others who had come too late,
Camanche.
Why did they send thee off so soon,
Camanche?
They should have waited until noon,
Camanche.

(**Californian**, Nov. 19, 1864)

The scene shortly before Bret Harte's belated arrival at the foot of Third Street was captured by the more prompt C. E. Watkins on a glass plate negative (Plate 6). The C-2 alignment would appear to pass directly below the bow of the **Camanche**, at a time before King Street was brought up to city grade. The photographs of the launching of the **Camanche** have proved important in identifying the date of other Watkins photos of the Steamboat Point-South Beach area. For example, Plate 3, showing Tichenor's ways, was taken on the same day as the launching. The view of South Beach from Steamboat Point, dated 1865 by T. E. Hecht (Plate 8), was also taken on this day, or on the occasion of photographing the installation of the fifteen-inch guns aboard the **Camanche** in December of 1864 (Plate 7). In the days of wet-plate photography, when the artist had to develop his plates in a special tent or wagon immediately after exposure, "field trips" were apt to be an important occasion. In the case of the Steamboat Point and South Beach photographs by Watkins, we can identify the occasion by the presence of

certain ships in the background, including the steamship **Hermann,** despite the erroneous dates that the copier Hecht sometimes placed on his negatives. Many other San Francisco scenes of the 1860's, including some along the N-3, N-2, and N-1 alignments, can be dated by these field excursions.

The launching of the **Camanche** and its outfitting alongside the wharf at Third and King Streets took place on the site that we think may have been the location of some earlier shipbuilding activity, such as that of John G. North. This point, the intersection of Third and King, would appear to be an excellent location for test boring to determine if any quantity of materials from early shipbuilding activity exists.

The **Camanche** was probably the last vessel built at the foot of Third Street, but there was other shipbuilding activity of the late 60's near the Gas Works (between Second and Third) and at the site of Tichenor's ways (foot of Second Street). A clipping from J. S. Hittell's newspaper scrapbooks gives us an idea of the amount and variety of the activity--including an introductory note as to where Patrick Tiernan had moved to by 1866. Tiernan was now out at the Potrero, North's location, but the area near the Citizen's Gas Company Wharf was alive with shipbuilding:

> At the foot of Kentucky, P. Tiernan commenced building a schooner about 200 tons register. At the Citizens Gas Company Wharf between Second and Third, in George Damon's yard, is the new schooner **Ada May** ready to be launched. She is 94 feet long and 25 feet beam . . . measure, 150 tons. Vessel's frame is Eastern white oak and hackmetac. She is copper fastened. All the iron fastenings throughout are galvanized with 6,000 tree nails in her hull. She has a center board, is a beautiful model, and will cost $16,000 when completed. Most expensive vessel of her class ever built in California. Owned by Capt. Albert Jossely, who will run her to Monterey. Adjoining this vessel is a small propeller 45 feet long being built for the Telegraph fleet. Next to this is a large schooner being built for Charles Hare by Daly Howland and Company intended for foreign trade . . . 100 feet long, 28 feet beam, 12 feet depth . . . 250 tons . . . white oak floors, teak wood topsides, deck frame . . . will cost over $20,000. This is the first teakwood vessel built on the coast. At the Gas Company works, the schooner **Page** has just been rebuilt and is now fitting for expedition to Ochosak Sea . . . (Hittell Scraps, n.d.)

At Tichenor's ways ship repairing and shipbuilding was still going

Plate 8: South Beach from Steamboat Point, 1864 . . . Tichenor's Ways, at the foot of Second Street, is out of sight to the right. The shoreline here tends sharply westward, away from the C-2 alignment, which runs out close to where the schooner at the right is anchored.

South Beach, at the left, was lined with ways for building or hauling small vessels, but was far from the C-2 or C-3 alignments. The copier has misdated the photograph, which was certainly made by Watkins on one of his two trips out to the **Camanche** construction site at Steamboat Point in the late fall of 1864. (Bancroft Library)

Plate 9: The Foot of Second Street August, 1868 . . . A slip for the new trans-bay ferry **Alameda** is being built here at Tichenor's Ways. The marine railway was still in operation, with Ralston's steam-yacht **Brisk** drawn up (at center) for remodeling. (S. F. Maritime Museum)

Plate 10: The C-2 Alignment in 1867 . . . The meticulous artist Joseph Lee has stationed himself at the Pacific Mail Docks. Beyond the railroad spur is Tichenor's Ways and the gas works. Had Lee stood a hundred feet to the left, he would have been looking right down King Street towards the gas tank. The Pacific Oil and Lead Works is at the right. (California Historical Society)

strong in the late 1860's, as can be seen in Plate 9. When this view first turned up, some twenty years ago, it was not at all clear where the picture was taken or what was going on. Mission Rock is visible in the background, which identifies the site as Tichenor's ways, the same scene found in Plate 3, but from a different angle. The roofed-over warship in the background is the ancient U. S. S. **Independence,** which was stationed here for a couple of years. The vessel in the foreground, hauled up on the ways, is William C. Ralston's new steamyacht, **Brisk.** Domingo Marcucci, the famous Rincon Point and Steamboat Point shipbuilder of the 1850's, had cut her in half so as to lengthen the yacht enough to install new boilers. Marcucci mentions in his narrative (dictated to one of H. H. Bancroft's assistants) that he did this lengthening job on the **Brisk** in 1868 (Bancroft Scraps). The ferryboat just beyond the **Brisk** is the **Alameda,** first of the classic double-ended ferryboats of San Francisco bay. She lies alongside the new ferry slip designed to accommodate her.

In the case of the **Central Pacific Railroad vs. Alfred A. Cohn** (October, 1876) Cohen testified that he had built the ferry slip (here seen under construction) in August of 1868 at a cost of about $14,000. Cohen was involved in this suit with the "Big Four" of the Central Pacific because of a falling out amongst probable thieves. On the first of August, 1868, Cohen, W. C. Ralston, and others bought up three-fourths interest in Tichenor's block at the foot of Second Street for $200,000. In October 1869, C. P. Huntington negotiated a lease with Tichenor for half of the block, with an option to buy the whole block for $250,000. A year later the railroad moguls picked up their option, in the interest of making the foot of Second Street their terminal for freight cars brought over from Oakland by ferryboat. The lawsuit, which brought forth the details of the transactions and the construction on this property, was occasioned by the Central Pacific's claim that Cohen had defrauded them by pocketing the $50,000 difference between the 1868 price and the 1870 price.

Thus, Plate 9 shows us Cohen's new ferryboat and ferry slip in conjunction with his partner Ralston's new yacht just before the railroad moved in and converted the property to the freight terminal facility that it was to remain until the building of the new seawall after the turn of

the century.

At this same time, at the foot of First Street, another giant corporation was changing the face of the waterfront. This was in the form of the Pacific Mail Dock slightly to the eastward of the end of the C-2 alignment. The Pacific Mail Dock figures in the foreground of the Joseph Lee painting, shown as Plate 10, and in the two-part Watkins panorama, shown as Plate 12. The history of the Pacific Mail operation on this site will be discussed in detail in connection with the C-3 alignment. For here, it is enough to say that the C-2 alignment terminates at King Street and the Embarcadero--about in the middle of the basin of the Pacific Mail Docks.

It was the end of an era for Steamboat Point--the end of Rincon Hill as a place of fashionable residence--and the beginning of a new one as freight delivered by railroad cars ferried from Oakland, freight shipped in the Pacific Mail Line to their new wharf at the foot of First Street, freight brought in by the ubiquitous scow schooners from up and down the coast and across the bay, and more freight brought up from the south by rail changed the character of King Street, turning it into a network of freight communication lines dotted with warehouses that were to increase in number up through the turn of the century.

CULTURAL ACTIVITY ON THE C-2 ALIGNMENT, KING STREET . . . 1866-1919

In addition to the informal and sometimes ephemeral business activities that characterized the Channel Street development (C-1 and C-4 contract areas), King Street from the mid-1860's through the turn of the century was dominated by enduring businesses with major capital investments. There was a $1,000,000 investment by the Citizen's Gas Company at Second and King in 1865—an investment that was estimated to be $4,000,000 by 1877, when the gas companies merged. (**Alta,** May 2, 1864; **Bulletin,** November 8, 1877) The Pacific Oil and Lead Works was described as "massive and substantial," standing on the hill that had been cut away to make space for it in 1866. **(Bulletin,** July 9, 1870) Even allowing for local boosterism, the four-story brick works was big for its time and built to last. It was in continuous operation for over fifty years. The construction of the Pacific Dock in 1867 at the foot of First Street meant that from 1867 until the seawall was constructed in 1908 the largest and most important West Coast steamship lines loaded and unloaded cargo and passengers at the point that lies 175 feet beyond the C-2 alignment and is crossed by the C-3 alignment. The Southern Pacific dickered at length for the right to put its lines through to San Francisco so that freight cars arriving in Oakland could be brought by the big rail car ferry **Thoroughfare** (later by the **Transit)** to the foot of Second Street and up the King Street tracks to the freight sheds and terminal by Fourth Street.

Thus, the King Street C-2 contract area is characterized by early

recognition that the Steamboat Point area was the key link for connecting San Francisco to Oakland, to the Orient, and to the commerce of the world by both rail and water freight. Much of San Francisco's heavier industry, such as the Union Iron Works, tended to be centered further south in the Potrero, but the connection to these industrial heavyweights was the land covered by the tracks of both the various streetcar lines and the Southern Pacific Railroad. Long Bridge was in place out Fourth Street by 1865, making it possible for both the laborers and the raw materials of the factories, as well as the finished goods, to be transported in and about San Francisco. With the scows bringing in the coal for the gas works, the flax for the linseed oil works, the lumber for the furniture company, the cooperage, and the planing mill, and the multiple freight yards of the Southern Pacific shipping everything from wines and hides to kegs and plows, King Street was the scene of concentrated business activity concerned with, and dependent on, the moving of both the people and all of the things that a fast-growing city needed. This cultural and business activity grew from 1866 through 1900, especially after the opening of the transcontinental railroad in 1869. As the Southern Pacific activities increased, warehouse space became even more important than manufacturing, which began moving out into the Mission district, south to the Potrero, or across the bay to Oakland by the early 1920's.

The 1906 fire stopped at Townsend Street, leaving the section along the C-2 alignment intact. (U.S.G.S. 1907) Warehouse space became increasingly valuable after the fire that swept the city, so that brick warehouses tended to be maintained, while new ones were built, such as the handsome four-story brick Southern Pacific Warehouse at 123 Townsend that runs through to King. In 1922, the Southern Pacific built the biggest warehouse in the wharf area—the China Basin Warehouse—an enormous concrete structure (627 feet along the Channel and 100 feet across to Berry) that dominates the Channel and Berry Street area even today when it is being converted into offices that invite the tenants to dock their sailboats alongside the outdoor restaurant.

In order to get a precise picture of the nature of the cultural and business activities that occurred within 150 feet of the C-2 alignment

AP 5~ State Harbor Commission Ms., 1877

during the life span of most of these businesses on King Street, a block-by-block description follows, using the 1887 Sanborn Insurance Maps as a base line, the 1891 updated Sanborn Maps, together with the city directories published by Langley, and others, each year during the period from 1866 up through 1919. See the Appendix in the C-1 and C-4 Report for a discussion of the nature of the Sanborn Insurance Company Maps.

King Street: Fourth to Third, on the South Side

Block #422 on the Sanborn 1887 block map (Map F) had a typical one-story frame saloon and restaurant on the corner of Fourth and King Streets with a planked porch that extended into the street on Fourth Street. Both buildings fronted for 50 feet on Fourth and ran back 75 feet along King Street, where the lot was bisected, in 1887, by Southern Pacific spurs that led across King Street past a triangular platform to become part of the complex of tracks by the passenger station on the Townsend side of Block #422.

Just past the Southern Pacific spur, the land in 1887 was owned by C. A. Hooper, one of San Francisco's largest lumber dealers. All of the businesses in this block were devoted to the many uses of wood in the 1880's—the California Cigar Box factory, the South Point Planing Mill, Jesse Drew, the Stair-builder, J. R. Fairweather's Sash, Door, and Blind Company, George Windeler's Cooperage, and Andrew Frei's Furniture Company. The "backdoor" of Block #422 on Berry Street was fenced with lumber wharves for incoming coastal vessels from the Pacific Northwest. Thus the raw materials needed for all of these King Street craftsmen was at hand.

Directly along King Street, within 50 feet of the C-2 alignment, small horsesheds fronted for about 20 feet next to the Southern Pacific spur--probably used in the immense drayage business of the 1870's and '80's that transported goods all over San Francisco. By 1887, Southern Pacific tracks ran right down the middle of King Street through to the Second Street Wharf.

Andrew Frei's Furniture Manufactory fronted for 150 feet on the south side of King Street. It was really three frame buildings, the first a 28-foot two-story building that Frei shared with George Windeler, the cooper who had a furnace with a smokestack in the rear of the works. The second two buildings were 38 feet each, three-story frame buildings that housed the planing mill, varnishing sheds, and finishing tools for cabinet work. Wood was stacked beside the buildings on up to Haggin Street in 1887.

Andrew Frei was a Swiss wood-turner who immigrated to California in 1859 and who first appears in San Francisco city directories in 1867, when he made bedsteads and furniture with a partner--George Field--at the corner of Mission and Fremont at the Mechanic's Mill. In 1873 he moved to King "between 3rd and 4th" as the firm of Field and Frei. At that time he lived up the street at Fourth and Brannan. By 1882 the company was listed as A. Frei's Furniture Factory at 231-239 King Street. By 1887 he had expanded to add a furniture warehouse up the street on King towards Third Street. Hittell describes the business as "The oldest and most successful furniture factory in San Francisco," which occupied more than 43,500 square feet, "more than an acre of factory, warehouses, drying rooms and an engine house, exclusive of the lumber yard 125 by 100 feet." The factory in 1882 employed 200 men--"No Chinese"--and manufactured bedroom sets and bedsteads with a market that included the entire Pacific Coast and the Sandwich Islands. (Hittell 1882: 608) By 1891 business must have been very good, as Frei had moved to the still-fashionable address of 22 South Park. By 1895 he had retired from the business (no longer in the city directories) and was listed simply as a "farmer" on Rincon Place.

Sharing the premises with Frei in 1887 was **George Windeler's Cooperage** which manufactured wine casks, barrels, kegs, tanks, clarifiers for brewers, and "all kinds of cooperage on the shortest notice"--according to his 1895 ad in Crocker-Langley's **Directory**. Windeler was a German immigrant to California who chose a trade in which there was a proverbial shortage on the Pacific Coast. Coopers were among the higher-paid craftsmen of the 1880's--as high as $3.50 a day with steady employment

MAP F
Sanborn, 1887
Fourth St., Block 422

TOWNSEND

KING

RITCH

THIRD

FOURTH

BERRY

422

428

42

ARIZONA WAREHO.

A. FREI'S FURNITURE WAREHO.

SOUTH POINT PLANING MILL

SAN FRANCISCO FURNITURE

UNION ICE CO

F. E. KNOWLES & CO

STONE YARD

MECHANICS HO.

STREET

the year round. The growing native wine industry paid $4.50 each for casks and kegs. At least three fourths of all cooper's trade was the making of wine, liquor, and beer casks. (Ibid.: 620 ff.) Windeler was still in the business after the earthquake and fire of 1906, but had moved his business to 144-154 Berry Street, where he was located for the next decade.

The 1887 and 1891 Sanborn Maps show **Haggin Street** cutting through to King Street just past the stacks of lumber near Frei's furniture manufactory. Haggin Street in 1887 was lined with small dwellings on the east side and smaller shops on the west. The houses were one- and two-story frame buildings that faced on Haggin Street. The row of eight 14-foot structures on the west side of the street may have been small identical shops (15 by 40 feet). Haggin Street was only 38 feet wide and ran from King Street to Berry Street. By 1915 it had disappeared under the Southern Pacific tracks.

The **Andrew Frei Furniture Warehouse** was fifty feet east on King past Haggin on Block #422 in 1887, and was still there in 1891. It was a 28-foot, two-story building that fronted 55 feet along King and was 120 feet deep. Directly next to the warehouse was a very small office and a blacksmith's forge. The lot that extended 45 feet further on King and ran 250 feet deep through to Berry was the site of the **F. E. Knowles & Company Stone Yard** in 1887. Frederick Knowles was the president of the company that handled both granite and Colusa sandstone on the same site until 1910.

Next to Knowles Stone Yard, and set back for 50 feet from King Street, was **John Twigg's Boat Building Shop.** Twigg had a small one-and two-story shop (about 40 by 30 feet) with large vacant lots on either side that faced the back doors of restaurants, saloons, drugstores, and shops that fronted on Third Street in 1887. Twigg's address is listed in Langley's **Directory** as the "Southeast corner of Ritch & King" as early as 1879. Ritch Street cut through to Townsend to King just short of Third Street on Block #422. Twigg continued to build boats on this spot up through 1891. The site had easy access for launching at the foot of Third Street and the South End Boat House. He and his family lived at 201 King

Street and they all appear to have been involved in the boatbuilding business. James I. Twigg as well as John E. Twigg were listed as boat builders. Timothy Twigg was a ship joiner and Samuel Twigg was a ship joiner at the Union Iron Works. By 1910 the family business had been moved to the Potrero where they continued as "designers and builders of high class power and sailing yachts." (Crocker-Langley: 1910)

The southwest corner site of Block #422 on King Street was a two-story saloon and restaurant with a dwelling on the second floor. Characteristically, a covered wooden porch extended from King Street around to Third out into the street for 3 or 4 feet. The corner was unchanged from 1887 through 1891 but by 1919 it, too, had become part of the Southern Pacific complex of tracks and stations.

King Street: Fourth to Third, On the North Side

Block #422 on the north side of King Street from Fourth Street to Ritch Street in 1887 was owned by the **Southern Pacific Company,** with the exception of the Arizona Warehouse at Ritch and King. The Southern Pacific station in 1887 (see Map F) was an undistinguished shed on Townsend Street near Fourth, the tracks not yet having been extended through the block to Third Street as they were in later years. Plate II taken in the late 1870's or early '80's (rather than in 1890, as written on the photograph) shows the scene looking across King Street, over the terminal block to Fourth and Townsend. The platform bordering King Street is in the foreground, and the three-story general office building of the Southern Pacific at Fourth and Townsend in the background, and the low, peaked roof of the passenger station in between. The origin of this arrangement predates the 1887 Sanborn Map F by more than a decade. Langley's **Directory** for the year commencing March, 1873, remarks that the Central Pacific had during the previous year spent one million dollars on the Mission Bay improvements required to bring the tracks of the former San Francisco and San Jose Railroad from Market and Valencia to this location. At this time the Central Pacific was erecting its "magnificent building of pressed brick and stone dressing on the north corner of Fourth and

Plate 11: (below) **Southern Pacific Depot, ca. 1879 . . .** The imposing headquarters of the Central Pacific-Southern Pacific Railroads at Fourth and Townsend looms in these views. In front of it is the peaked-roof wooden shed that served the passengers of the mighty railroad. The plate directly above gives us a close-up of the Refreshment Saloon with its homey touch of boxes of fruit for sale (on sawhorses) and the tumble of milk cans on the platform to the rear. A dozen or so waiting passengers, onlookers, and baggage men wear the top hats and derbies of a more formal era, but their patient stance reveals a familiar railroad attitude.

At the center of the view below is the "advance coach" of a roving circus. In the immediate foreground is a freight platform located a few feet from the C-2 alignment. (both views, Bancroft Library)

Townsend at a cost of $200,000." (Langley 1873: 34)

While the passenger tracks terminated just a little to the right of the view in Plate II, a pair of freight tracks curved through to King Street, as seen in the center foreground. These tracks continued up King Street to the freight slip at Second and King.

On the east side of Fourth Street, 100 feet north of the C-2 alignment, was a small group of frame shops. The tracks that connected the railroad yard with the railroad ran out the line of Long Bridge to the Potrero crossed the C-2 alignment 50 to 150 feet east of Fourth on King. A single track (obscured by the dashed line of the C-2 alignment on Map F) traversed the entire length of King Street.

By 1891 the Southern Pacific had extended its tracks across Ritch Street to a new and more suitable passenger terminal at Third and Townsend. The 1915 Sanborn Block Map shows all of the 1887 structures gone from both sides of King Street between Third and Fourth. The Mission style passenger station (finally demolished in 1977) was at the Third Street end of a huge complex of tracks and rain shelters for the passengers. The passenger station that appeared on the 1891 block map had been moved to the southeast corner of Third and King, where it served as a freight station. The freight tracks took up most of the block between Third and Fourth on the south side of King Street. By spring of 1977 both blocks, north and south of King between Third and Fourth, had been razed.

The **Arizona Warehouse** was at 232 and 230 King Street at the corner of Ritch and King in 1887. It was a large, two-story brick structure with iron shutters. The building measured 125 feet along the north side of King Street and 140 feet along Ritch Street, with a platform in the front on King Street to receive freight from the Southern Pacific spur track that ran directly in front of the building. The earliest directory records of the Arizona Warheouse indicate that the structure was in place by 1886 and remained there through 1898. By 1907 it is no longer listed in Langley's **Directory**. By 1919 the site was covered by Southern Pacific Freight Shed G.

Ritch Street was a narrow (35 feet) back street that ran from King

to Townsend and on to Brannan in 1887. The block from King to Townsend on the west side was largely taken up with the Arizona Warehouse and the J. E. Whittier Building Supply Storage Yard. On the east side it was largely vacant in 1887, except for some small shed-like buildings, all frame, in various shapes and sizes grouped together. The only business with any recorded ownership is the **G. W. Kneass Boat Building Shop** which fronted on Third with its back toward Ritch. By 1891 Ritch Street was closed and a wood yard covered the area. By 1919 Ritch Street from King to Townsend was no more. The Southern Pacific tracks terminated along what was the whole length of the small street.

The **G. W. Kneass Boat Building Shop** was 100 feet from the C-2 alignment on Third Street. It was a two-story building, 25 by 150 feet, with an engine and smokestack towards the rear. Like Twigg, Kneass had a high reputation as a builder of elegant boats and launches. The boatbuilding shop was first listed in Langley's as early as 1883 as "Third near King" where Kneass continued to build boats up through 1895. By 1904 he had moved his boatbuilding works to the Potrero (as did Twigg in 1907) but continued to use this Third Street address as a salesroom for boats he described in his 1904 ad as follows: "50 boats can be seen at salesrooms. Blue Gum lumber for truck and wagon wood - all kinds of wooden and iron boats built to order and constantly on hand. Steam and Gasoline launches, a specialty." (Crocker-Langley 1904) By 1915 the site was occupied by the end of the big Southern Pacific Freight Shed G.

King Street, Third to Second, On the South Side

Block #414 on the south side of King Street from Third to Fourth had two tenants in 1887, the San Francisco Lumber Company and the San Francisco Gas Light Company (See Map H). The **San Francisco Lumber Company Yards** occupied 525 feet along King on the south side all the way through to the Berry Street Lumber Wharf with lumber stacked 275 feet deep. It was 65 feet to the water line across Berry Street in 1887 and 200 feet to the Third Street Hay Wharf.

MAP H
Sanborn, 1887
Third to Second

TOWNSEND STREET

SECOND

KING STREET

THIRD

413

414

19

Bay of San Francisco

SAN FRANCISCO LUMBER COS LUMBER YARD

PACIFIC OIL AND LEAD WORKS

OLIVER CHILLED PLOW WORKS W HO

COMMERCIAL W HO

OVERLAND

Scale of Feet

The San Francisco Lumber Company is not listed in the city directories until 1886. It was formed by the combination of several lumber companies to engage in general retail lumber trade. By 1889 it had five offices, among them Pier 12, Steuart Street, Berry Street, and Pier 3 (the Block #414 site). The company handled all kinds of lumber shipped in from the Pacific Coast. (Alson: 69) It specialized in "Oregon pine, redwood shakes, lathes, shingle, dry stepping and shelving." (Langley 1891) It continued in business down through 1910, but the **Pacific Pine Lumber Company** occupied this particular site from 1891, while the San Francisco Lumber Company moved to the south side of Channel Street between Fourth and Fifth Streets. (Crocker-Langley 1910)

The lumber business continued and expanded on the King Street site, for by 1915 the **Pope and Talbot Lumber Company** stacked three million feet of lumber all over Block #414. A giant of the lumber industry, Pope and Talbot was at the foot of Third Street as early as 1874 and still there in 1919. The Berry Street Wharf was covered with lumber "in transit." A note on the King Street block in 1887 comments that lumber is scattered in piles into the street itself. A double track of the Southern Pacific ran down King Street towards Second Street and by 1919 the lumber had been cleared from the streets to make room for four sets of tracks with sidings and spurs beside businesses on the north side of King Street.

Charles Pope and William Talbot had offices at 204 California Street and a string of packets that operated out of Puget Sound. (Langley 1891) Writing in 1882, Hittell says, "Since pioneer times Pope and Talbot have been prominent in the lumber business as dealers in the San Francisco office and manufacturers in Washington Territory and shippers in their own vessels. Among the first to perceive the advantages of Puget Sound as a source of lumber supply for the California market, they selected an excellent site at Port Gamble, and erected a mill, which has been one of the most productive enterprises of its kind. Working under the name of the Puget Mill Company, they have two mills at Port Gamble with a capacity to turn out 175,000 feet a day. . . . The actual annual product is 40,000,000 feet. . . . They also own mills at Port Ludlow, Port Gamble, and Utsalady, . . . produce 99,000,000 feet of lumber annually, as much

as the entire consumption of Sicily, Greece, or even Portugal." (Hittell 1882: 592) In addition to owning their own mills and timberlands they owned another corporation, the Puget Sound Commercial Company, which ran 16 Puget Sound Packets up and down the coast to San Francisco. (Ibid.)

Altogether the Pope and Talbot Lumber Company was in business continuously in San Francisco for 126 years, ever since Captain Talbot brought the **Oriental** to the gold rush port in 1849 where he at once saw the advantages of bringing timber from the northwest coast to the city that had to be built almost overnight, not once but many times. The company closed down their West Coast shipping in 1960 but still maintain their sales offices for their land and timber interests. (Coman and Gibbs: passim)

The gas works at the foot of Second Street is particularly important for the C-2 alignment because its construction in 1864, by the **Citizens Gas Company**, on "the reclaimed water block bounded by Townsend and King and Second and Third marked the end of the shipbuilding on this site by Patrick Tiernan and others, and the filling and grading of King Street." (Hittell, **Scraps:** v. 1)

Plate 4 shows the "gas holder" unfilled and Long Bridge, in the background, completed but not yet dotted with the structures that were to line it in later years. The dashed line running acoss the picture has been added to indicate the precise location of King Street and the C-2 alignment in the early spring of 1865—during the completion of the construction of the gas works.

Gas to light the uncertain planked streets of San Francisco was the subject of controversy from as early as 1852, when James Donahue wrote the **Alta** on June 27, "I propose to erect buildings and lay pipe, lamps, and posts to light the city with brilliant gas . . . keeping the same in good repair." Donahue, with his brother, Peter, was the proprietor of the Union Foundry at the time but early on had cast about for the means to monopolize San Francisco's gas needs. In return for a five-year contract he proposed a million dollar investment in lighting San Francisco's streets.

The **Alta** commented on Donahue's efforts after the streets of San

Francisco were illuminated for the first time: "In traveling over the muddy sidewalk and wading through the street crossings there was a light ahead—a sort of guiding star in the mud. . . ." San Francisco Light had turned on for the first time on February 10, 1854. If the evening dinner party was awash in speeches and native imported wines, the gas lights failed often enough during the evening to amuse the city fathers--who were not so amused in the months that followed.

"The $3,000 bill paid by Common Council on Wednesday night for lighting up the streets is the only evidence that has 'turned up' in a long while of the fact that the streets are being lighted at all. It would require the eyes of an owl to find the locations of the rush-light luminaries which burning with all the brilliancy of a penny-dip candle serve to show our citizens how dark the streets are when the sun has gone down." (**Alta,** June 6, 1854)

The **Citizen's Gas Company** marked a new step in San Francisco's progress with the construction of a brick building 60 feet wide and one hundred and seventy feet in length on land reclaimed on the water block bounded by Townsend and King and Second and Third Streets. "Piles were driven along the outer edge of the block, some three hundred and fifty feet from the shore, and wooden bulkheads sunk; the hills were then dug away and used in filling up the land surrounded by the bulkhead, until the entire space was raised some six feet above the high tide. . . . East of the brick edifice (seen in Plate 4) and fronting on the wharf, a coal depot is being erected. It is of wood, sixty-four feet side and two hundred feet long, and fifty feet high. At the north end there will be a steam derrick with a platform forty feet square, upon which there will be two cars; when these cars are filled they can be elevated by means of the derrick to the top of the buildings, where tracks are laid on which they can be conveyed to any part of the building, thus saving a large amount of help in handling of the coal. These buildings will be completed by the middle of March, 1865, at which time the company expects to furnish gas to our citizens." (Langley 1864: 46)

Despite the attempt to break the gas monopoly of the Donahue brothers by the Citizen's Gas Company, the rival company was absorbed

into the Donahue monopoly before 1868. (Cronise: 657) By 1877, Citizen's was part and parcel of the "Grinding Monopoly" of the San Francisco Gas Company which had, at that date, never published a report of its finances. Net profits were estimated at 24% per annum with 100,000 shares at $100 each. The **Bulletin** estimates that the capital outlay of the combined works was $4,000,000. In 1877 San Francisco contained 60,000 families, of whom 30,000 burned gas amounting to $6 a month. This was, of course, in addition to the mounting bills paid by the city for street lights. At that time San Francisco produced more gas than New York, Chicago, or Philadelphia—and at the highest rates in the country. (**Bulletin,** November 8, 1877)

The 1883 **Directory** for San Francisco lists Peter Donahue as a "Capitalist" in control of the San Francisco and Northwestern Pacific Railroad, the San Francisco Gas Company, and the Sonoma Valley Railroad, with offices at 430 Montgomery Street. But the Donahue monopoly on gas for the city of San Francisco had been broken, as seven companies are listed by the year 1881.

By 1887 the Sanborn Company notes that the giant gas holder was "abandoned" and much of the gas works—still owned by the San Francisco Gas Light Company—were not in use. The extensiveness of the works can be seen on Map H. The coal shed (200 by 60 feet) on the south end of Block #414 fronted on the "Basin" of the Second Street Wharf, constructed by the Citizen's Gas Company in 1864. Trestle runways extended from the shed for 600 feet across the end of Block #414, across King Street, through Block #414, and terminated at Townsend Street. An additional 250-foot trestle curved around to a second coal shed that was 275 feet across the entire end of Block #413.

Second Street in 1887 ended at the Second Street Wharf, just as it had since 1866, so that it was possible for ships from England, Wales, and Australia to bring in the large quantities of coal burned in the operation of the gas works. Ships could come alongside the coal sheds and unload coal directly into the works. The price of imported European coal was kept low in the 1880's by the corresponding demand for California grain. Wholesale prices for Australian and English coal was $5.50 a ton

in 1885, with Welsh coal bringing as high as $8 a ton. Vessels arrived in San Francisco with coal cargoes considered as "ballast" in order to load up on California wheat for the return trip. (**Chronicle**, Sept. 8, 1886)

Coke was the important by-product of the coal that was burnt for gas production and it, in turn, was shipped to the foundries in the Bay Area on the Southern Pacific spurs that cut through the end of King and Second Streets.

By 1891 the San Francisco Gas Works name was still listed on the Sanborn Maps at this site but the works appear to have been abandoned. By 1907 the Southern Pacific erected a warehouse on the precise spot of the giant gas holder (25 feet from the C-2 alignment). The Pope and Talbot Lumber Company had lumber stacked over the area previously occupied by the gas works. The overhead trestles had been removed and there was no trace of one of San Francisco's pioneering utility companies.

King Street, Second to Third, On the North Side

Block #414 at the eastern end was the site of the Gas Company Works in 1887 (Map H). A site that measusred 275 feet square contained the gas holder tank, the second large coal shed that fronted on Second Street, cut through by the Southern Pacific tracks, and the northern half of the raised trestle for hauling the coal about the works. The gas holder area itself is now occupied by the **Southern Pacific Warehouse** that extends all the way through to Townsend. This handsome four-story brick warehouse appears on the 1915 (updated to 1919) Sanborn Maps but the precise date of the warehouse has not been ascertained. By 1919 the Haslett Warehouse Company leased this structure from the Southern Pacific, who still own the building in 1977. The warehouse has been restored and is for lease at the time of this report. Architecturally the building is one of the most attractive examples of the best class of turn-of-the-century brick warehouse construction, and is certainly a potential candidate for landmark status.

The **Pacific Oil and Lead Works** extended for 275 feet along King

Street on the north side and ran back another 275 feet to Townsend. One of the oldest manufacturing companies in San Francisco, the Pacific Oil and Lead Works was established in 1866, on this site, to utilize a process for removing oil from flax (to produce linseed oil)--a method patented by P. B. Bruner, the superintendent of the new plant. The cake left over from the linseed was ground up and shipped to England for especially "invigorating" cattle feed.

The **Daily Evening Bulletin** described the works: "The building is a fine brick one, 125 by 100 feet, and to obtain space for it a hill which abutted on the bay has been cut away at considerable distance so it now with a precipitous face stands like an ancient ruin as a memento of old times in San Francisco." (**Bulletin**, July 9, 1870)

The four-story building was built over a basement (a novelty for San Francisco) which was used for oil storage for barrels of linseed oil. Oil was cooled in three large iron vats in the basement after it was refined on the first floor. Seed and meal was stored on the first and second floors as well. The seed was dried on the third floor and dropped into a large hopper on the second floor, where it was sifted onto three five-ton grinding stones (carved out of Angel Island) to be rolled and pounded into cake with the oil extracted. Five tons of flax seed a day produced 400 gallons of oil. In 1870 the flax was imported from both China and Chile--supplemented with a small crop grown in the Delta and Southern California. (Hittell, **Scraps**: v. I)

The one problem that the founders, L. B. and John Benchly, could not solve in the plant's earlier years was persuading California farmers that there was profit in raising flax. Various accounts indicate that the plant had to close down from time to time because of this shortage. The company ad in the 1868 **Directory** had a line of bold type at the bottom that read, "Highest prices paid for flax seed delivered to the Company Works at King near Third." (Langley, 1868) To augment the linseed oil production they also produced some 60,000 gallons of castor oil in a year.

By 1887 the plant was in full operation and had added coconut oil as a sideline. Copra was imported from the South Pacific and the coconut oil brought 75 cents a gallon as a valuable commodity in the soap and

cosmetic industry. Again, as with linseed, the by-product of coconut is a cake left after the oil has been pressed that is ground up for cattle feed. (Hittell 1882: 717)

By 1891 Pacific Oil and Lead no longer manufactured zinc and lead paints. By 1915 the company had added a small warehouse on the vacant site along King Street and coconut oil was its main product. Compressors had taken the place of the big rock slabs used for pressing linseed oil. The former site of the pioneer Pacific Oil and Lead Works is currently occupied by a two-story, reinforced concrete warehouse.

The brick walls of the **Commercial Warehouse** butted up against the Pacific Oil and Lead Works on the north side of King Street. Measuring 60 feet on King Street and 125 feet deep, the one-story warehouse had an iron truss with a peaked corrugated iron roof. This warehouse first appears in the city directories in 1887 and continues to be listed up through 1901. The unusual structure of the interior suggests that it was built especially for wine storage. From 1907 through 1910 the Grays Harbor Commercial Company is listed as having a warehouse at the "Foot of Third" which very well may be this same structure. As Grays Harbor's total export was lumber, it would appear that the Grays Harbor Commercial Company did business in merchandise at Grays Harbor, Washington. The lumber-laden steam schooners that came to Channel Street would find some return cargo from this conveniently located exporter. The site was occupied by a sheet-metal works in 1915.

The **Oliver Chilled Plow Works Warehouse** fronted for 50 feet along King Street and extended back for 150 feet. It was a brick, 18 foot, one-story warehouse owned by the Oliver Chilled Plow Works from 1886 through 1907. The company had its main offices in South Bend, Indiana, where they specialized in making Casaday sulky plows and gang plows. The office at 37 Market Street was a sales office for the plows that were manufactured in the east, shipped to San Francisco where they were stored on King Street and sold to farmers up and down the Central Valley. It was one of the ironies of the railroad improvements that the gang plow, a California invention, should be procured more cheaply from a

midwestern purveyor than from the local manufactories that had revolutionized farming techniques in America.

By 1910 the business had moved to Brannan Street and the site was now called the Chester Warehouse and was used for storing general merchandise. The site today is occupied by the Whyte Wire Rope Company in what is presumably the original brick building as seen from the back wall. The front has been modernized and modified.

From 1879 through 1910 the **Overland Warehouse** stood at the corner of King and Third, extending back to Townsend. A firewall ran the full length (300 feet) through the one-story brick warehouse that was 140 feet on the north side of King. In 1887, the warehouse was used for storing hides, wool, tallow, and furs. Curiously, in the '80's California both imported and exported hides. As Bancroft notes, regarding both tanning and hide trade, "The export of hides was a simpler process, and it continued until the disastrous seasons of 1862-64 checked cattle-raising, and till home consumption retained its share. The latter grew so fast as to require the importation in 1881 of nearly 80,000 hides, and double as much in 1885. Nevertheless, the railway then carried east 1,600 tons of dry hides of certain quality, valued at over $600,000." (Bancroft 1890: v. 7, 91)

By the time the Overland Warehouse was in business rail shipments of hides was a very big business. The Southern Pacific tracks went right by the warehouse. Out in the streets at the northeast corner of Third and King the railroad flagman had a tiny house for flag stops.

T. W. Floyd was the first warehouse manager in 1879 and at that time the Pioneer Wharf at Battery and Filbert was owned by the same company that owned the Overland. The building changed hands several times. E. Newlands & Company owned it in 1891 through 1895. By 1915 the section fronting along Third Street was a chemical and drug laboratory with a drug store, saloon, and restaurant lining the east side of Third Street. Part of the original warehouse section (90 by 300 feet) was then called the Internal Revenue Bonded Warehouse #1 and was owned by the Haslett Warehouse Company. The structure had been reinforced following the earthquake with wooden posts, and skylights were added on the roof.

PACIFIC MAIL STEAMSHIP CO'S FREIGHT HOUSE & DOCKS

OF

BAY

Basin

MAP I
Sanborn, 1887
Second to
Pacific Mail Docks

TOWNSEND ST.

1522

1523

23 ST. WHARF

King Street, Second Street to the Embarcadero

Block #1523 on the 1887 Sanborn Map (Map 1) always described in the city directories and other sources of the 19th century as "The Foot of Second Street," was the site of the Central Pacific-Southern Pacific freight car ferry slip until the construction of the new seawall and The Embarcadero in 1908. The C-2 alignment transects the Second Street Wharf at its landward end and also the corrals located on the wharf and terminates in the approximate center of the Pacific Mail Steamship Company Basin (600 feet east of Second Street).

The large improvement in the former site of Tichenor's ways at the foot of Second Street dates from its purchase by Contract and Finance Company (an operation owned by the "Big Four" of the Central Pacific Railroad) in October of 1870. The Langley **Directory** for the year commencing April 1871, reported the following regarding "great changes at the Foot of Second Street" in the past year: "Substantial wharves have been built, upon which a capacious shed of several hundred feet in dimensions has been erected. Within this the necessary offices of the company have been made and over the wharf runs a labyrinth of tracks conveying one on an adjustable apron which can be raised or lowered as to permit cars to go from the deck of a steamboat by which they are transferred with their cargoes to the main track on the opposite side of the Bay. . . . The works are extensive and answer the purposes designed but do not constitute such a depot as is worthy of the great trans-continental road or of the Metropolis of the Pacific."

A year later, the situation had not improved, "The Pacific Mail Steamship company occupies the Wharf at the foot of First Street and the freight depot of the Central Pacific is at the Foot of Second. These great transportation companies, among the most important in the world, have but slight and quite inelegant structures for the terminal depots of their extended routes. Capacious sheds have been erected protecting passengers, employees, and goods from wind and rain . . . but they do

not give full accommodations for the great traffic nor are they architectural ornaments to the city." (Langley 1871: 15-16)

Since this wharf and the adjoining basin of the Pacific Mail Steamship Company docks remained very much as they appear on the 1887 Sanborn Map 1 (with some improvements and fill to within 50 to 150 feet north of the alignment near Second Street) down to the building of the seawall in 1908, we may expect to find cultural debris associated with the transcontinental freight operation of the railroad and possibly materials associated with the Panama and Trans-Pacific operations of the Pacific Mail Steamship Company and the Occidental and Oriental Steamship Company. The O and O was another extension of the operations of Stanford, Huntington, Crocker, and Hopkins and shared the wharf facilities with its supposed rival, the Pacific Mail Company, from 1875 down through the official merger of these companies after the turn-of-the-century. (Kemble, 1940: 353 ff.)

What type of cultural debris might there be? Obviously, it would include such items as bottles and other personal consumables of the same type that we would expect to encounter on the C-1 alignment in the way of Long Bridge. The other end of the range of materials might include such items as Chinese ceramic wares cast or dropped off the incoming vessels from the Orient. There will almost certainly be no coherent deposits of cultural materials, but the range of individual items might be very large. The pilings of the original ferry slip built by the Oakland Railroad and Ferry Company in 1868 as well as those of the initial Second Street Wharf will probably be encountered.

The initial construction of the Second Street Wharf and ferry slips was with conventional pilings, but the 1887 Sanborn Map 1 shows that filling had taken place along the south side of the wharf. This fill probably did not come from the Second Street cut but may have come from the grading operation between Brannan and Townsend and First and Second associated with the Pacific Mail Steamship Company construction and improvements as late as 1871 and 1872. Plate 12 shows the development of this location clearly. C. E. Watkins made this two-part panoramic view in 1871 when the Pacific Mail Company was extending its pier, as can be seen at the far right. Also at the far right is a freight car of

Plate 12: The Pacific Mail Docks and the Oriental Warehouse, 1871 . . . Looking north from Second and Townsend Streets, C. E. Watkins caught the scene at the end of the C-2 alignment on two wet-plate negatives. Half of this panorama turned up in one archive, the other half in a second. The view is dated by the construction of an extension to the Pacific Mail Docks--a pile driver is seen at work at the far right. The C-2 excavation will terminate just this side of the stern of the famous gold rush steamer **Senator**, the vessel nearest the camera. In the center is the Oriental Warehouse, which stands today. The strange "butte" in the left-hand section of the panorama is a "left-over" from the excavation of the foot of Rincon Hill and illustrates boldly the source of the fill in the area. At the lower left-hand corner is the photographer's darkroom-wagon, its panels advertising Watkin's celebrated "Yosemite Gallery." (Left, Bancroft Library; right, S. F. Maritime Museum)

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the Central Pacific Railroad. The left-hand portion of the view--with Japan Street running through the center--gives a clear impression of the large amount of excavation that took place in this area.

Not only the corrals shown on Map I, but the further extension of these corrals on the north side of the alignment by 1891, suggest that a great deal of livestock was moved over the Second Street Wharf, and this is confirmed by Senator Tom Maloney in his recollections, "The cattle, pigs, and sheep would be driven through the streets of San Francisco to Butchertown, sometimes four or five hundred in number, by one or two men and one or two dogs. . . ." (Maloney, **South of Market Journal**, December, 1931)

The 1915 Sanborn Maps show this area between Second Street and the Embarcadero as it was not long after the seawall was completed (1908) and the lands behind filled to their present level. The Pacific Mail had rebuilt its warehouse for spare parts and its repair shops fronting on the Embarcadero between King and Berry and backing up, at one point (directly opposite Gale Street), to within 50 feet of the C-2 alignment. Otherwise the King Street alignment between Second and Embarcadero was vacant except for a small dwelling on the north side of King, 150 feet east of Second Street--and, of course, the Southern Pacific tracks connecting with the State Belt Line Railroad on The Embarcadero.

For a discussion of the earlier cultural activities on this site (Block #1523), "The Foot of Second Street," see the section on Filling In and Building Up, 1864-1869.

KING STREET . . . 1919 to 1977

King Street, from Fourth to Third Street, as late as 1919 was lined with the tracks of the Southern Pacific, both in the street itself, and on both sides, covering all of Block 422 and 423 on the Sanborn Insurance maps issued in 1915 and updated in 1919. In addition to the thousands of commuters from the Peninsula, passengers from Los Angeles traveled up the coast route on such famous trains as the **Lark** and the **Daylight**, to end their trip in San Francisco at Third Street in a Spanish-Mission type of terminal built especially for the influx of visitors to the 1915 Panama-Pacific Exposition. Seven sets of tracks handled Southern Pacific trains of the lucrative short-haul service as well as the more celebrated and elegant coastal runs. Aside from the passenger business heavy freight service terminated at sheds along Berry Street.

Freight Sheds G was one of a series of long, low wooden sheds with truss roofs that were built to store incoming freight for delivery. Freight Shed G was built on the site of Haggin Street, the Mechanics Hotel, and the South Point Planing Mill. All of the King Street businesses associated with lumber were gone by 1919 and Southern Pacific tracks covered the entire area.

Although some of these sprawling wooden sheds can still be seen, down the street on Berry, Freight Shed G and its associated tracks, as well as the railroad freight terminal office on Third Street, have given way to a still more modern form of transportation technology--a freeway that covers all of block 423. The Southern Pacific has moved its passenger

terminal to a Fourth Street location, having razed the old Third Street passenger terminal in the spring of 1977. Block 422 has been cleared of any existing structure, including the Southern Pacific tracks, and at the time of this report is enclosed with a wood-and-chain fence.

Where the Pope and Talbot Lumber yards dominated the scene in 1919, today there are one-story concrete warehouses and manufactories covering block 414, from Third to Second Streets between King and Berry. The railroad tracks still run down the middle of King Street, but they are little used today.

Across the street, on block 413, there are still some large brick warehouses from the World War I era. The most handsome building—and one that dominates the area—is a five-story Southern Pacific Warehouse that cuts through from 123 Townsend to King Street. The building has been completely renovated and turned into spacious offices for such contemporary tenants as **Rolling Stone.** The building is still cut through the center to allow railroad tracks to run right down the middle, with the third and fourth stories of the warehouse built over the tracks. There are basements and sub-basements in the building. The spring of 1977 the warehouse changed hands and is no longer owned by the Southern Pacific but is now called the Townsend Building. At the time of this writing we have been unable to determine the precise date of the origin of this structure. It does not appear on an 1891 Sanborn Map, but the site (previously occupied by the Citizen's Gas Company) was vacated at the time. The city directories for 1907 show a Southern Pacific Warehouse on King Street (presumably this one, although they owned many storage buildings in the immediate area). Southern Pacific archives have failed to turn up the construction date so that we are unable to say whether this building precedes the 1906 earthquake and fire. The official U.S.G.S. map of the burned district, issued in 1907 to accompany the report of Richard Humphrey, shows that the fire did not cross Townsend Street.

Whether or not the building was built before the 1906 earthquake, the handsome brick structure with its rows of arched windows would seem to be a good potential candidate for landmark status in San Francisco. The back entrance on King Street is within 50 feet of the C-2 alignment.

The only other reminder of the earlier brick warehouses that lined King Street on block 413 is part of the Commercial Warehouse that was shown on the 1887 Sanborn Map at Third and King. The old brick wall can only be seen by standing on Townsend Street, near Third, and looking at the back of the MacWhyte Wire Company. The front is not recognizable due to extensive modernization with concrete.

The site of the old Pacific Mail Steamship Company repair shops on block 1523 (that area that lies below Second Street toward the present-day Embarcadero) still contains railroad tracks that connect with the Belt Line Railroad operation around the San Francisco waterfront. Tracks also cut through block 1522 on the north side of King Street and are laid down on the street itself in a manner much like they were on the 1919 Sanborn Maps. But it is the freeway, rather than the railroad, that dominates the landscape in 1977 on King Street.

RECOMMENDATIONS FOR ARCHAEOLOGICAL TESTING AND MONITORING ALONG THE C-2 ALIGNMENT

Detailed archival studies regarding the development of those parts of the City of San Francisco on or near the C-2 alignment have allowed the authors to become well acquainted with the evolution of the South Beach area. Since most of the development of that part of the city took place in the latter half of the nineteenth century, there is ample historical documentation to be consulted and we believe that we have been able to construct a relatively comprehensive picture of the changes that have taken place in the King Street area in over a century. Prior to 1851, as we have seen, the area in and around the C-2 alignment was virtually uninhabited. Among other things, our research has allowed us to become familiar with those structures that existed near the C-2 alignment as well as the uses to which they were put. We know a good deal about the nature of the business establishments that existed along the C-2 alignment during the last hundred years. Also, as closely as can be determined by archival research, we have identified a number of localities along the alignment that we believe might be likely to yield cultural materials of interest to historians and archaeologists.

As we have seen, there is little possibility of encountering cultural materials along the C-2 alignment from the prehistoric, Spanish, Mexican, or early American periods (2000 B.C - 1848 A.D.). Only the Steamboat Point area was not submerged beneath the waters of the bay, and this region appeared to have attracted little interest from anybody before the

beginning of the Gold Rush period. The only artifacts that might be encountered from these early periods are those that were lost or casually discarded at some undeterminable spot along the alignment. There certainly was not recorded occupation of the area that would allow for the deposition of any concentration of cultural material in any sort of stratigraphic sequence.

With the advent of the gold rush period, human activity in the South Beach area increased rapidly. There is no doubt that cultural materials from the gold rush and later periods will be found along the route of the alignment. However, it does not appear likely that any concentration of materials in stratigraphic sequence will be found along the alignment that might shed new light upon historic activities for which we do not already possess ample documentation. However, as there is always the small possibility of encountering some single unexpected find that turns out to be important and had not been anticipated, adequate testing and monitoring measures must be devised so that there will be no adverse impact to the cultural resources along the C-2 alignment during construction of the Channel Outfalls Consolidation Project.

Preconstruction Archaeological Testing Procedures: As a result of detailed achival research, we have concluded that it is unlikely that significant concentration of cultural materials in stratigraphically revealing relationships will be encountered along the course of the C-2 alignment. There is no doubt that some cultural materials will be encountered along the alignment; but in our opinion it is not likely that such artifactual material will be of a nature or found in a context that might add new depth of insight or additional perspective to the knowledge that already exists concerning the development of the area during the prehistoric, early historic, or recent periods.

For the most part, the cultural materials encountered along the C-2 alignment are likely to consist of random finds of casually deposited artifacts that might occur at almost any point along the project contract route. However, there are also a number of specific locations along the C-2 alignment that cannot on the basis of library research alone be

dismissed out of hand as archaeologicallly insignificant. Therefore, we recommend that a program of archaeological testing be undertaken along the C-2 alignment prior to the commencement of construction activities. In our opinion, a series of carefully placed mechanical test borings located along the alignment at what we believe to be potentially strategic spots would adequately determine the presence as well as the nature of any cultural material that might be deposited along these somewhat archaeologically uncertain portions of the C-2 alignment.

We propose that eleven 12" mechanical archaeological test borings be placed along the C-2 alignment by a qualified historical archaeologist selected by the City and County of San Francisco. This archaeologist (hereafter to be referred to as the Principal Investigator) shall have the responsibility of selecting the exact locations of the borings as well as the number of borings to be placed at each site that has been selected. The Principal Investigator shall monitor the implementation of the borings, and with the assistance of one or more qualified persons whom he may hire, shall undertake the responsibiity of collecting the samples of the cultural materials unearthed by the borings and of transporting them to an appropriate location for analysis and storage. The Principal Investigator shall within twelve working days of the completion of the borings produce a written report describing any findings made and their interpretations. If, in the opinion of the Principal Investigator, the evidence produced by the first set of eleven 12" borings indicates a need for further archaeological testing, as many as six 24" test borings shall be held in reserve to be placed in locations designed by the Principal Investigator. In the event that any of this second set of borings are implemented, the Principal Investigator shall be required to conform to the same set of procedures and responsibilities he followed in the direction of the initial set of test borings: namely the monitoring of the placement of the borings and, with the aid of one or more qualified assistants, the transportation of the cultural materials collected to an appropriate location for analysis and storage, and the production of a written report within twelve working days of the completion of the field work.

On the basis of our present knowledge acquired by archival studies,

the following locations appear to be the most likely to yield potentially significant cultural materials in some kind of a stratigraphic sequence: (1) The spot approximately 275 feet northeast of Fourth Street where the alignment intersects the original shoreline. As mentioned above, this is one of two spots along the alignment where there is any possibility of encountering artifacts from the prehistoric or early historic periods. Therefore, it is recommended that one test boring be placed on this spot to determine if cultural materials of any sort are present along the route of the alignment. (2) The intersection of King and Third Streets is of interest for a number of reasons. First of all, the alignment once again transects the original shoreline at this point. Also, the Civil War Monitor **Camanche** was constructed at what today is Third and King in 1864, and there was earlier shipbuilding on this spot. On the basis of this evidence, it is proposed that two archaeological test borings be placed at this intersection prior to the advent of construction activities. (3) From the intersection of Third and King Streets, the alignment proceeds for 600-700 feet to the northeast (toward Second Street) through an area that was a location of shipbuilding activities during the 1860's. We therefore propose that three test borings be placed at intervals along this above-mentioned portion of the alignment. (4) Two test borings should be placed in the area 100-300 feet northeast of the intersection of King and Second Streets, as this is the location where vessels were once readied to be taken up on Tichenor's Ways and perhaps cultural material from these activities could be located and salvaged. (5) Two further test borings should be placed near the intersection of King and Second Streets as the installation of the works of San Francisco Gas Light Company in 1865 provided an occasion for the deposition of a considerable amount of fill. It would be of archaeological interest to determine the nature of the composition of the fill. (6) Finally, one test boring should be placed at the end of the C-2 alignment (toward First Street) as this location (which borders the C-3 alignment) is located almost exactly in the center of the Pacific Mail Steamship Company Basin. Possibly an interesting assortment of artifacts was deposited in this location over the years as a result of casual or accidental deposition that might be of potential interest to

archaeologists or historians.

We believe that with the implementation of these archaeological test borings and concomitant analysis and reporting by the Principal Investigator an adequate program of preconstruction testing shall have been undertaken with regard to the mitigation of adverse impact to cultural resources contained within the C-2 contract alignment of the Channel Outfalls Consolidation Project.

Procedures for Archaeological Monitoring during the Course of Construction: In addition to preconstruction archaeological testing procedures, a program of on-site monitoring needs to be developed, since no amount of research in the library can account for the rare, unexpected or accidental find of importance that could possibly occur at any point along the C-2 alignment during the construction of the North Shore and Channel Outfalls Consolidation Wastewater Project. Based on the evidence available to us, the chances of encountering such a find or finds within the alignments in question are relatively low, but cannot be ruled out altogether. Based upon archival research, there does not appear to be a need for full-time archaeological monitoring along the C-2 alignment during the construction of the forthcoming sewer system. Unless the results of the forthcoming testing program require a change in our professional judgment, we believe that the following monitoring procedures will adequately ensure the protection of any relevant or significant artifactual materials that may be encountered during the construction of the C-2 alignment.

First, a competent and qualified historical archaeologist must be retained by the City and County of San Francisco. This individual (hereafter to be known as the Principal Investigator) shall meet the minimum qualifying requirements of the National Park Service. The Principal Investigator shall have the responsibility of directing, coordinating and overseeing all archaeological monitoring activities and assessing (after appropriate consultation with colleagues with expertise in maritime history, the cultural history of San Francisco and historical archaeology) the significance and importance of any cultural materials encountered during

the course of construction activities. In addition, the Principal Investigator shall have the responsibility of recommending any measures for archaeological mitigation or salvage that might be deemed necessary as a result of finds made during the course of excavation and construction activities. The Principal Investigator shall be empowered with the authority to direct an immediate cessation of construction or earth-moving activities in the event that finds of archaeological significance are made during the process of excavation and construction along the C-2 alignment.

The Principal Investigator may engage the services of one or more qualified archaeological assistants to help him carry out his responsibiities with regard to the monitoring program. Any field assistant involved in the monitoring program shall meet the following qualifications: an undergraduate degree or graduate-level training in anthropology and archaeology and at least one season (of six weeks or more) of practical field experience in historic archaeology. The field assistants shall assist the Principal Investigator as the latter shall determine. Much of the routine on-site inspection of construction activities and telephone liaison between the resident engineer and the archaeological monitors may be undertaken by the field assistants if the Principal Investigator so directs. The field assistants shall be responsible for reporting their observations and finds to the Principal Investigator and for following his instructions and directions while in the field.

The Principal Investigator may retain the services of an archaeological associate to consult with him during the course of monitoring activities, should the Principal Investigator require such consultation. The archaeological associate, like the Principal Investigator, must be a qualified historical archaeologist according to the minimum requirements of the National Park Service and must be acceptable to the City and County of San Francisco.

The Principal Investigator may engage the services of a historical consultant to advise him as he requires during the course of construction activities along the C-2 alignment. The historical consultant shall be an individual of unquestionable expertise on the subject of Western North American history in general and the history of the development of San

Francisco specifically. The historical consultant shall be called upon to advise the Principal Investigator about the relevance and importance of various artifacts that may be encountered during construction along the C-2 alignment. Specifically, the historical consultant shall, at the direction of the Principal Investigator, offer advice as to whether or not certain artifacts are of significance or importance from a historical perspective and whether or not such artifactual material might conceivably contribute to a furtherance of knowledge or insight about the development or evolution of the Western United States in general or the San Francisco Bay area in particular.

The following techniques are to be followed during monitoring activities:

1. Instruction of the Resident Engineer and Crew Foremen: Before the advent of construction, the Principal Investigator shall meet with the resident engineer and construction crew chiefs. The Principal Investigator shall explain the value of cultural and artifactual materials in general and the specific relevance of such materials with regard to the North Shore Outfalls Consolidation Project. The Principal Investigator shall instruct these individuals concerning the nature of the artifacts that might be encountered along the N-2, N-1 or N-4 alignments as well as the specific locations where such an encounter is most likely to occur. In this meeting (or meetings) it shall be made perfectly clear that any or all artifactual materials that may be collected at the various construction sites belong to the City and County of San Francisco, and that federal and state statutes require the collection, identification and storage of all such materials by an appropriate public agency. Further, the resident engineer of each of the contract alignments in question shall be charged with the responsibility of making certain that this provision is complied with and that no unauthorized collection of artifactual material occurs.

2. Monitoring, Sampling and Collection of Artifactual Materials: The Principal Investigator, or one of the field assistants under his supervision, shall maintain daily telephone contact with the resident engineer of each of the above-mentioned alignments during the course of excavation and construction activities. The resident engineer shall have

the responsibility of informing the Principal Investigator if cultural materials have been encountered during the previous working day. If cultural materials have been encountered, the resident engineer shall keep a log in which he notes the locations of all artifacts encountered. All artifactual materials so recovered from the construction site shall, along with the accompanying notes made by the resident engineer, be set aside for inspection and collection by the Principal Investigator.

In addition, the Principal Investigator or one of the field assistants under his direction shall make regular on-site inspections of all areas being excavated within the contract area. The frequency of these inspections shall be determined by the pace at which excavation and construction proceed, but it is envisaged that one inspection shall be made, under ordinary circumstances, approximately every other working day. During the monitoring program, the Principal Investigator, or one or more of his assistants, shall collect representative samples of the cultural materials that are being encountered along the alignment in question. The amount of material to be collected shall be determined by the Principal Investigator. The materials collected shall be systematically collected, transported to an appropriate laboratory facility and there washed, sorted, catalogued and analyzed.

We believe that the implementation of these procedures will allow construction to proceed without undue impediment and at the same time allow for the collection, analysis and preservation of a representative sample of the cultural materials that may exist long the C-2 alignment of the North Shore and Channel Outfalls Consolidation Project. Further, the Principal Investigator or one of his assistants shall be in daily contact with the resident engineer (if not at the job site itself) and shall be in a position to immediately recommend a cessation of construction activities should a find of sufficient magnitude be made.

3. **Recovery and Storage Procedures:** All portable cultural materials collected during the course of construction on the C-2 alignment shall be transported to an appropriate institution where, under the supervision of the Principal Investigator, these materials shall be washed, sorted, given a catalogue number and analyzed. With regard to the ultimate disposition

of any cultural materials recovered, the City and County of San Francisco may make selections for use by such city-supported institutions as the San Francisco Maritime Museum. As it is required that all artifacts be stored permanently under conditions adequate for their preservation, it is recommended that the National Park Service provide such facilities within the Golden Gate Recreation Area.

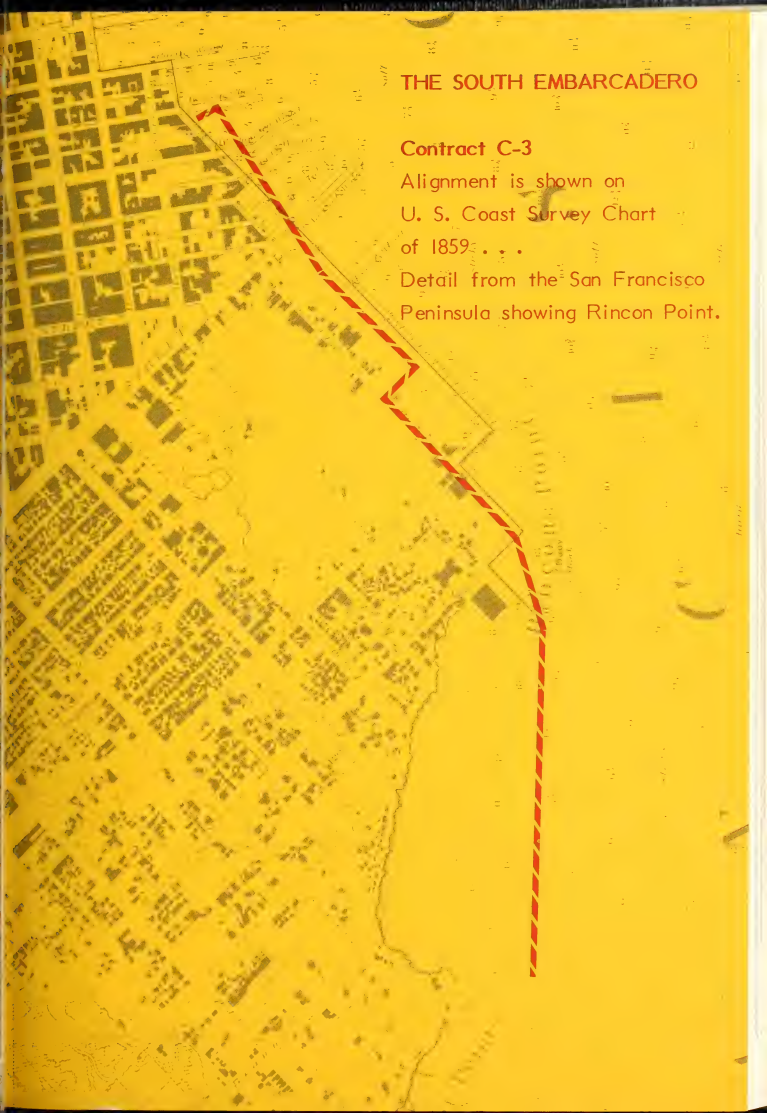
The Principal Investigator shall have the responsibility of preparing an adequate report on all cultural materials recovered during the course of construction (or during subsequent mitigation measures) and shall have this written document ready for publication after the passage of a reasonable period of time (within two years of the termination of construction or mitigation measures on the alignment in question).

4. Procedures for Structures: In the event that the remains of structures be encountered during the course of construction activities the following procedures shall be followed: (a) The Principal Investigator shall immediately ascertain the nature of the find and immediately recommend cessation of all excavation and construction if he deems necessary. (b) He will act according to his determination and the advice of other consulting specialists if needed, to see that the structure is carefully measured, photographed and recorded on the spot. (3) Determine with his historical and/or maritime consultants whether or not the remains are significant additions to the historical or archaeological knowledge of the development of San Francisco and decide whatever measures shall be taken to excavate or salvage the remains, either in whole or in part.

Appendix

THE SECOND STREET CUT . . . What follows is a description in 1871 of the physical problems encountered in the wake of the political and civic decisions to change the commerce of the city of San Francisco (See Plate 4). "The opening of Second Street from Folsom to Bryant has proved a more stupendous undertaking than was anticipated. As the workmen proceeded with the grading they were seriously and sometimes fatally interrupted by the falling avalanches of earth caused by the excavations. Another obstacle presented itself. The ground on each side of the bank, a few feet from the cut would sink, and force itself out at the bottom of the bank thereby endangering the lives of the workmen by the caving in of the super incumbent earth. This was chiefly occasioned by the formation of the soil being composed of alternative layers of rock and deposits of sand, which being non-cohesive bulged downward and inward like filling in of a swampy piece of land. The opening of the hill which is in some places seventy-five feet high commenced in April of this year, and will be completed about the first of November [1869]. . . . There has been constantly employed since the commencement of the undertaking, two hundred and fifty teams and five hundred men, including drivers. . . . The walls on Second Street are built of large blocks of Folsom granite, which are anchored transversely and laterally, the anchor being carried deep into the bank, thereby precluding any danger from caving. . . . The steam-paddy has been constantly at work during the past year in loading the dirt-cars on various temporary railways in different streets. Hills have been leveled and valleys filled up so that the southwestern part of the city has lost its former 'lumpy' look aspect, and now presents the appearance of a level plain. In the vicinity of Long Bridge the extension of Fourth Street on the C-I alignment a large number of water lots have been filled in, and extensive improvements are now in the process of completion. The appreciation of real estate consequent upon these

operations will be immense." (Langley's **Directory**, Dec., 1869 - March, 1871: 16) Once the cut was made directly through from Market Street to the foot of Second Street the effect was to connect all passenger and freight terminals of the major railroads and steamships lines, as well as all the usual ferry boats, horse-drawn street cars, routes followed by the immense drayage business, and the wharfs and piers for the scows and tugboats. The effect was to make the area south of Market the center of the freight business and transportation.



THE SOUTH EMBARCADERO

Contract C-3

Alignment is shown on U. S. Coast Survey Chart of 1859 . . .

Detail from the San Francisco Peninsula showing Rincon Point.

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SCOPE, OBJECTIVE, AND METHOD

Although the objective and directions for the study of the C-3 contract area did not vary from the generality of the introductory statement in the Channel Street (C-1 and C-4) section of this report, it should be noted that the length of the contract area covered by the C-3 alignment, from Jackson Street at the northern end, past Townsend Street at the southern tip, required the most extensive search of archival materials of any of the earlier geographic areas studied. The fact that cultural activity along the C-3 alignment had a long and continuous history in the wharf area from the time that Steuart Street was accepted by the city in 1854 further intensified our archival research.

It also seemed appropriate to include an additional study on the Spanish and Mexican periods, since the C-3 contract area included Yerba Buena Cove. For this reason a discussion of Spanish navigation and early exploration of San Francisco Bay was added, as well as a description of the village of Yerba Buena.

Once again the archives of the San Francisco Maritime Museum proved to be invaluable. The activities of Captain Fred Lawson in sinking the **Elizabeth** and the **Rome** (or **Roma**) in order to enhance (by physical possession) waterlot titles on the city front has been the subject of extensive analysis on the part of the staff of the Maritime Museum. The work on sunken gold rush hulks and storeships was initiated by the late Al Harmon during his years as librarian of the research library at the museum. His work was extended by the present curator, Harlan Soeten,

who has mapped the possible location of over 50 vesels based on archival research. Both the director, Karl Kortum, and Mr. Soeten have been generous with their time and patience in helping us to more precisely locate those hulks relative to the sewer alignment.

In addition to the Maritime Museum research projects regarding the location of sunken hulks, considerable research into the life of seamen on the San Francisco waterfront in the sailing ship days was done in course of preparing reports for the Division of Parks and Recreation of the State of California in 1959 and 1960. Information on the Steuart Street sailors' boarding houses was the result of interviews and archival research efforts found in "The Pacific Coast Steam Schooner" by R. R. Olmsted in April of 1960.

Gerald Dow's "Bay Fill in San Francisco: A History of Change" proved to be an invaluable tool—in fact, so useful was his table on the dates and locations of the various construction contracts on the new seawall that we have reprinted it in the Appendix of this report. (Dow's report was written in fulfillment of a Master's Degree at California State University in San Francisco in 1973).

Another invaluable research tool for this complex waterfront history was the **Harbor Commission Biennial Reports.** These detailed lists of disbursements, together with plans and maps, were of invaluable assistance in understanding the extent of waterfront changes. The commission reports give precise dates and locations for pier repair, pier removal or lengthening, putting down and removal of piles, dredging operations, the building of the old seawall, as well as the construction of the new seawall. All of the pertinent information was included as it effected the C-3 alignment.

Scope of the Construction Excavation: The C-3 sewer excavation extends from Jackson Street and The Embarcadero to King Street and The Embarcadero. It may be divided into two long segments involving two different kinds of sewer. From Jackson Street along The Embarcadero to Howard Street and from Howard to Steuart Street there will be a comparatively shallow excavation for a 3-foot-diameter force main connecting the large concrete box structures to the north and south.

From Howard and Steuart Streets to King Street and The Embarcadero the construction of a concrete sewer similar to that of the C-2 and C-1 contracts will require an excavation about 20 feet wide and ranging up to about 26 feet in depth at King Street.

Starting at a point approximately 250 feet from the east property line of Drumm Street (measurement to Drumm is used here because this line is uniform on historic maps) and the south line of Jackson, the alignment jogs about 60 feet to the east-southeast and about 110 feet to the northeast across The Embarcadero. At this point it turns southward at a right angle and proceeds along the east side of The Embarcadero at a distance ranging from approximately five to ten feet east of The Embarcadero Freeway footings. At Howard Street it turns 90 degrees to the westward and follows Howard to Steuart Street at a distance of 25 feet from the northerly property line.

This segment of the C-3 sewer excavation will be about 18 feet deep at Jackson, 12 feet in front of the Ferry Building, 7 feet at Howard Street. With reference to mean low water--an important point with regard to the period before filling took place--the invert profile is minus 6.16 feet at Jackson Street, minus .28 feet at the Ferry Building, and **plus** 5.03 feet at Howard and The Embarcadero.

At Howard and Steuart Streets the force main will drop into a concrete box sewer requiring excavation to about 15 feet below city base (which is 11.67 feet above mean low water). The sewer slopes downward to an invert profile level of minus 16.3 at Harrison, Steuart, and The Embarcadero, minus 18.23 at The Embarcadero and Spear, minus 20.47 at The Embarcadero and Beale, minus 22.87 at The Embarcadero, First, and Townsend, and minus 24.24 at The Embarcadero and King Street. Normally, the excavation will be no more than two feet below these inside culvert grades. The alignment of the sewer along The Embarcadero from Steuart Street to King Street is 10 to 20 feet east of the existing railroad tracks.

The "Idealized Soil Profile" prepared by Woodward-Clyde Consultants in 1975 on the basis of information from 17 test borings shows the excavation passing entirely through fill, but for a single point at The Embarcadero and King Street (the deepest portion of the sewer), where

it barely reaches into bay mud. Throughout most of the alignment, comparison of the modern soils profile with soundings on historic maps of different periods suggests that mud deposits accumulated rapidly after the early 1850's, bringing the bottom up to the level of the projected excavation in many places, but the overburden of fill subsequently depressed the surface of the deposits to below the sewer profile (with the slight exception mentioned). It should finally be noted that the idealized profile is based on a limited number of borings, and while these are sufficient for generalization, the profile does not necessarily reflect actual conditions at all points.

No surface structures other than railroad tracks and pavements will be impacted by the excavation. **BART**, as well as less imposing underground utilities, will be encountered--all of them dating from the times of the new seawall construction and after (late 1880's for the earliest section). The old seawall (1868-1870) may be encountered at the Jackson Street end of the alignment (the first 60 feet appears to coincide with the alignment of the seawall) and at Howard and The Embarcadero, where, having followed a route that places it between the old and new seawalls, the sewer turns 90 degrees and transects the southern end of the original seawall.

THE SOUTH EMBARCADERO: SUMMARY . . Historic Cultural Resources

Contract Area: The South Embarcadero historic survey area covers the Channel Outfalls Consolidation Project alignment from King Street and the Embarcadero in the south to Steuart Street, Howard Street, and the Embarcadero from Howard to Jackson Streets in the north (Contract C-3). Most of the historical development along the alignment falls into two geographical divisions: Yerba Buena Cove (from Jackson Street to Steuart and the Embarcadero), and South Beach (Steuart and the Embarcadero to King Street and the Embarcadero). The following report has been divided into chronological periods, but it is of some importance to keep in mind the rather distinct developments of these two areas, particularly in the early periods of wharf-building and filling.

Prehistoric, Spanish, Mexican, and Early American Periods (to 1848): The entire contract alignment traverses a line that was in deep water (12 to 30 feet or more) down to at least 1853. The cove of Yerba Buena (the northern half of the alignment) was the best anchorage for 18th and early 19th century vessels on the San Francisco Peninsula, but it was not the official anchorage of the Spanish period, and did not enjoy officially-encouraged use until the founding of the town in 1835. Anchorage in the cove (which would often have been along the C-3 alignment) became frequent after that date, amounting to several vessels a year. None are known to have sunk there during this period. It is not only likely that scant cultural material would have been deposited as the result of such

anchorage, but the proposed excavation will not reach the depth at which such materials would lie. There was no activity along the South Beach portion of the alignment.

Gold Rush Period (1849-1857): Hundreds of vessels were anchored in the cove--and some of them abandoned--between the last half of 1849 and 1853. Cultural debris from such activity, as outlined above, would still lie too deep to be impacted by the excavation. Analysis of the situation of known hulks or the probability of unknown hulks near the alignment leads to the conclusion that the possibility of encountering such remains is close to nil.

Construction of piers and buildings along the C-3 line in the Yerba Buena Cove area proceeded rapidly after 1853. Siltation of the front along the line of East Street and Steuart Street was rapid, and by 1857 materials lost or disposed of through the various piers and streets built on pilings would have come to rest at or very little below the mean low tide mark. But the shallowness of much of the excavation, the construction of the seawall of the late 1860's, dredging of the remaining slips afterwards, and finally the depression of the mud line by the overburden of fill systematically reduces the probability of such finds to an extremely low level. The fill may contain some cultural materials--on Steuart Street brick and slag is found in one boring--but it is not likely that fill of the late 1860's (or after) came from a source rich in gold rush debris.

In this period the South Beach segment of the alignment was still in deep water and maritime activity was comparatively low, except at Rincon Point and Steamboat Point (roughly Spear and Harrison and Second and King Streets).

Filling In and Building Up (1858-1887): The already-built-up area from Jackson Street to Rincon Point was further developed or redeveloped by the seawall of 1867-1870, and by new wharves in the late 1860's and early '70's. South of Rincon Point, the alignment was reached by wharves at First Street, Beale Street, and Harrison Street by 1868, and by 1877 there were one or more wharves in almost every block along the C-3 alignment.

The Pacific Mail Dock, extending southeast from First and Brannan, was the most famous of these piers, and was built out beyond the alignment by 1867.

With regard to recovery of cultural material, there is fill along Howard Street and Steuart Street from this period. The source is not known, but as it was placed along streets filled by short-term contracts, it is not likely anywhere to exhibit the rich characteristics of a dump. South of Rincon Point, materials lost or discarded from the piers would again lie below the level of the projected excavation, as shown by a current soils profile, except at approximately King Street and the Embarcadero, the site of the former Pacific Mail Dock Basin.

Late Nineteenth Century, Early Twentieth Century (1887-1919): The present-day seawall that lies entirely ouside of the C-3 alignment was built in many sections dating from 1887 to 1915. The probability of encountering **in situ** cultural materials dating from the time at which any given section was undertaken appears to be no larger than the probability of materials of the earlier periods, since the same condition obtains--the excavation does not (with the exception noted) reach to the depth at which such artifacts would lie. However, it must be stated that it is surprising to find at what a late date streets and corners near Rincon Point and South Beach (that would appear to be dry land on typical city maps) were actually planked streets or platforms on pilings. Logic puts cultural materials deposited from or through such structures within reach of the excavation--but the soil profile does not.

The fill behind the seawall sections must have come from many sources over this long period. It was placed under contract, but we have at least one comment by an eye-witness (Captain Fred Klebingat) who watched the dumping of ballast and waterlogged hay bales and cement sacks back of the seawall along the Embarcadero.

Conclusions: While the history of the development of the C-3 contract area is unusually complicated and involves many opportunities for conjecture as to the quantity and type of cultural materials that may

underlie it, specific area-by-area analysis reduces the physical likelihood of finding materials that might add to our knowledge of the cultural history of San Francisco. We find no specific sites that are very promising from the archeological standpoint, but quite a few that just may contain some variety of cultural materials. No known historic structures or deposits will be impacted by the C-3 excavations.

SPANISH, MEXICAN, AND EARLY AMERICAN PERIODS . . . 1769-1848

As the C-3 contract area includes most of the alignment where the North Shore and Channel Outfalls Consolidation Project crosses the original Yerba Buena Cove, this particular report is an appropriate place for a brief summary of the pre-gold rush development of San Francisco. With regard to the entire alignment of the North Shore and Channel Outfalls sewers, it should be kept in mind that only three segments of the excavations transect areas of the original shore: 1) at the westernmost end of the Marina, where the N-4 alignment traverses a small part of what was originally the marshy shore of Strawberry Island; 2) at Fort Mason and along Bay Street, where the entire N-1 alignment tunnels under Black Point to the original shore of the cove at North Beach; and 3) along King Street, between Third and Fourth Streets, where the C-2 alignment crosses the tip of old Steamboat Point. As the N-1 construction will be a bored tunnel rather than a cut-and-cover excavation, only the portals areas will involve excavation that could reveal cultural materials deposited on the original shore.

Along most of the North Shore and Channels Outfalls alignments--and all of the C-3 alignment--cultural materials dating from the period of Indian occupation or the first 75 years of European activity can only be objects lost or discarded from vessels or watercraft or materials introduced with fill at later dates. The probability of finds of high interest as relics--museum pieces, as it were--is lower than might be at first thought, for most of the projected excavations will not be to the

specifications that would be desired by the archaeologist or historian. For instance, the C-3 excavation is too shallow to reach the original bottom, while the N-2 exacavation is too deep (a tunnel through the mud), and the C-1 and C-4 cuts are in a place unfrequented by early mariners. The probability of finds of more serious archaeological value than "sport" relics, that is, deposits that might shed new light on the extent or nature of cultural activities of the period, can only be extremely low, as discussion of the type of maritime activity prior to the gold rush will show.

Spanish Navigation: At first blush it is a curiosity of history that the coast of Upper California should have been explored by agents of an adjacent, rich, and rapidly expanding empire at a time when the East Coast of the present United States was largely **terra incognita**--and then not claimed by occupation for 227 years. This seeming anomaly is usually explained by historians as the result of specific conditions in New Spain and the Spanish Empire in general in the years, decades, and finally centuries after the voyages of Cabrillo and Ferrelo twice up and down the California coast in 1842-43. As far as they go, such explanations are certainly correct, but the problem of the geographical remoteness of Upper California--particularly with regard to what looks on a map to be an easy navigatoin--is less well appreciated. The deserts of Sonoma and Baja California were obvious physical barriers to steady expansion from Mexico, but the voyage to Alta California was also difficult, and this difficulty is relevant to the maritime traffic of the period of Spanish and Mexican settlement. In the 17th and 18th centuries a trans-Atlantic voyage was a more expeditious matter than beating up the coasts of Mexico and California, and Vera Cruz was more convenient to Seville than San Blas was to Monterey Bay. Cabrillo's expedition suffered severely of scurvy, as did Viscaino's of 1602-03. In the colonization expedition of 1769, the vessel **San Antonio** had a "prosperous" voyage of only 55 days from the tip of Baja California to San Diego; her sister, the **San Carlos**, took 110 days from La Paz, and two-thirds of her company died at sea or shortly after landing at San Diego Bay. (Bancroft 1886: v. I, 120-131) This without the additional difficulty of passing Point Conception--"the Cape Horn of

California"--and reaching Monterey or San Francisco. So it was that even after the founding of the Presidio and Mission at San Francisco in 1776, maritime traffic between the west coast of Mexico and the California outposts of the Spanish and later Mexican times was infrequent, both because it was lengthy and uncertain, and because trade was controlled by bureaucratic policy more appropriate to the support of an encampment on Tierra del Fuego than the development of a prosperous province.

The first ship to enter San Francisco Bay was the same **San Carlos**, under the command of Lieutenant Juan Bautista de Ayala, in August of 1775. Ayala was commissioned to explore the bay in anticipation of the overland party that was to establish the Presidio and Mission. In September of 1776, the Presidio was officially founded on the site near the Golden Gate, convenient to the logical emplacement of a battery at the narrowest part of the harbor entrance. A month later the Mission was founded at the Laguna de los Dolores. Two geographical controversies are associated with the foundations of San Francisco: 1) that Francis Drake had brought the first ship into San Francisco Bay, in 1579; 2) that the Mission was first located at Washerwoman's Lagoon, at the northwestern foot of Russian Hill.

Both arguments are based in imaginative analysis of highly selected information, to the exclusion of the obvious. In any event, the ingenuity of the proponents of Drake's discovery of the bay would lead them to insist that he neither anchored near nor visited the San Francisco Peninsula and confined the exploration of his marvelous discovery to such non-maritime adventures as a walk into the country (Ross Valley?). Thus, there is no "evidence" that signs of 16th-century English occupation are apt to occur in the vicinity of North Shore or Channel Outfalls Project alignments. As for Washerwoman's Lagoon, it was over one-quarter mile to the south of the N-1 alignment--and the fairest arguments for the existence of a mission at this site are that nothing much was built there and not for more than a few months anyway.

The maritime annals of the last quarter of the 18th century pertain mostly to the arrival (or sometimes not) of the annual transport from San Blas. (Bancroft 1886: v.1, **passim**) The first foreign visit was not until

1792, when Vancouver in the **Discovery** arrived in the course of his scientific explorations. The English captain entered in the evening, was surprised to see no lights of the town he had presumed existed, and in the dawn could discover only cattle as evidence of European habitation. Vancouver had anchored at a place called Yerba Buena, out of sight of the Presidio and Mission. He was requested to remove his vessel to the official anchorage to the west of Black Point, in view of the Presidio.

The name "Yerba Buena" referred to the part of the San Francisco Peninsula east of what was later known as Black Point, and at this time was specifically applied to what we would call North Beach rather than the Yerba Buena Cove that occupied the site of present-day downtown San Francisco. The battery emplaced in 1797 on Black Point (née Point Medanos, née Point San José) was referred to as "The Battery at Yerba Buena." (Bancroft 1886: v. I, 701-702) From this circumstance, Bancroft concludes that subsequent navigators of the early 19th century, such as Beechey (1826), also chose this anchorage, when they could, in preference to the cove between Telegraph Hill and Rincon Point. (Bancroft 1886: v. 2, 587-590) Examination of the soundings of the Coast Survey manuscript chart of 1857, made when Meigg's Wharf was the only improvement that might have altered the depth of water in the North Beach area, makes this interpretation appear less likely than the configuration of the shoreline would suggest. The three-fathom line is so far out beyond the protection afforded by Black Point that the anchorage would have been every bit as uneasy as the official anchorage on the other side of the point. Wherever specific ship-captains may have dropped anchor, the place later known as Yerba Buena Cove would have been the seaman's preferred anchorage. Bancroft's **History of California** notes an order of Govenor Echeandía for the erection of a guardhouse at Yerba Buena Cove in 1827, the purpose being to extend official overview to an anchorage that visiting mariners were using, whether they were supposed to or not. But Bancroft could adduce no evidence that the guardhouse was built, and considerable that it was not.

While many more vessels visited San Francisco Bay in the 35 years after 1800 than in the 25 years before, the traffic was still very light,

even after Mexican authority replaced Spanish in 1822. The Russians from Sitka, Bodega, and Fort Ross made at least annual visits to exchange goods for foodstuffs. Perhaps the largest part of the arrivals were American whalers, which anchored in the bay at Sausalito, where they found ample wood, and water renowned for the length of time it would keep in their casks without turning bad. Beechey saw seven of these whalers anchored there on his 1826 visit. New England traders became conspicuous on the coast after 1800, but so long as trade and smuggling were synonymous, San Francisco was a poor theater of operations, for while the officials might be quite as willing as those elsewhere in California to close their eyes to a commerce beneficial or even necessary to the populace, it was physically difficult for the **commandante** of the Presidio to ignore vessels passing right under the old brass cannon of his fort. With the relaxation of commercial regulations rooted in the times of Cortez, the rise of the hide trade in the late 1820's and 1830's brought something like realistic commerce to California, and it is a most symbolic accident that Richard Henry Dana (whose **Two Years Before the Mast** would be the first message to stir the American popular imagination with regard to California) should have arrived aboard the hide-drougher **Pilgrim** at Yerba Buena in 1835, a few months after William A. Richardson had set up his one-house town on the site of the future city.

This summary of maritime activity between the founding of the Presidio and Mission and the founding of the town at Yerba Buena Cove--the most extensive activity that might conceivably have resulted in deposit of cultural materials along the North Shore and Channel Outfalls alignments--is not abbreviated for want of specific information. A history of Spanish and Mexican California could be written titled "Life on the Bureaucratic Frontier", and ship movements did not go unrecorded by officials of regimes highly concerned with the regulation of commerce. During the 45 years of Spanish rule, the arrival of more than one or two ships a year was a novelty. Under more progressive Mexican regulations the numbers increased to an annual dozen more. Bancroft lists 128 vessels on the coast at one time or another for the years 1825-1830, 99 for the years 1831-1835. Only some of them called at San Francisco, but some

of these visited the port more than once. (Bancroft 1886: vols. I and 2; v. 3, 145-149, 381-384) As for local navigation, it was virtually nonexistent. The Spanish officers were frequently embarrassed for lack of so much as a rowboat, while the two little schooners procured by the missions at San Francisco and San Jose from the Russians at Fort Ross were so ill-used that their sunken hulks were given to Captain Richardson when he offered to repair and operate them. (Hittell 1878: 77, 78)

The Anglos and the Village: The purpose of William A. Richardson's establishment at Yerba Buena Cove, close by the present-day Portsmouth Plaza, was, from both his viewpoint and that of the governor's, the improvement of trade. With his resurrected craft (variously described as schooners or launches), manned by Indian crews, he planned to collect hides and tallow (the only export of the Bay Area) together with foodstuffs, for more convenient trade with the "Boston ships" on the coast. Richardson was joined at Yerba Buena by a more energetic businessman, the American Jacob P. Leese, in 1836. Leese, bankrolled by Monterey merchants William Hinckley and Nathan Spear, built the first substantial structure of the new town, and his store was the first enterprise of its kind in the Bay Area. By 1840 there were about 50 inhabitants of Yerba Buena, 16 of them "foreigners," the tradesmen and businessmen whose presence justifies calling Yerba Buena a "town," while the somewhat more populous settlement at the Mission was no more than an agricultural village. The Presidio was abandoned; the Mission itself was reduced from a huge ecclesiastical estate to little more than a parish church as the result of the "secularization" policy of the mid-1830's. (See Bancroft 1886: v. 3, 689-711; Hittell 1878: 70-91)

The appearance of Yerba Buena in 1843 is shown in Plate I, a drawing made by a member of a visiting Swedish exploring expedition. The large building on the beach (1) is the Hudson's Bay Company store, built by Leese in 1838 and sold to the huge British trading company in 1841. It was located on the west side of Montgomery Street between Clay and Sacramento--almost a half-mile inland from the nearest point on the C-3 alignment. The ship and the brig in the foreground were

Plate 2: San Francisco Early in 1850 . . . Little filling of Yerba Buena Cove had taken place, but the wharves were reaching out to deep water. (1) is Central, or Long Wharf; (2) is the storeship **Niantic;** in the area of (3) are numerous building on pilings on the waterlots alongside the wharf. The C-3 alignment crosses the cove at the far left. (Bancroft Library)

Plate 1: San Francisco, 1843 . . . Made eight years after the founding of the village of Yerba Buena, this sketch by a Swedish visitor was quite accurate. The C-3 and N-3 alignments pass through the general location of the anchored ships. The large building on the shore of the cove is the Hudson's Bay Company. The adobe furtherest up the hill is founder William A. Richardson's "Casa Grande." (Society of California Pioneers)

probably anchored on or close to the C-3 alignment, which approximates the three-fathom curve (as shown on the 1853 Coast Survey Chart) between the lines of Jackson and Washington Streets.

The large house on the hill, back of what was later the Plaza, is Richardson's adobe, **Casa Grande** (13). The buildings numbered 14, 15, and 16 belonged to American merchants, the first to William Heath Davis, the second to Nathan Spear, the third to William Hinkley. The structure number 6 was the saloon of Jean-Jacques Voiget, and was the social center of Yerba Buena. A recent and careful analysis of this drawing by the somewhat mysterious G. M. Waseurtz of Sandels shows it to represent very accurately all of the houses in Yerba Buena at the time, with the possible exception of that first wooden building erected by Leese in 1836, which is absent. It may be, however, that the original Leese house had already been "recycled" for its building materials. (Fritzsche 1971: 3-13) The little town seen in the drawing of 1843 was to be transformed twice between 1845 and 1850. July of 1845 brought the raising of the American flag and the arrival of 238 immigrants, nearly all of them Mormons, in the ship **Brooklyn**. The following March, the first contingent of "Stevenson's Regiment" arrived--volunteers enlisted in New York for the occupation of Mexican California with the understanding that they intended to become settlers of the territory they were to help conquer. A census of June, 1847, showed 459 residents in the town now called "San Francisco," 228 of them native-born Americans and most of the rest from northern Europe. Only 32 were of Spanish or Mexican descent, only 34 Indian. Not included in these numbers were the men of Stevenson's Volunteers or residents of the village at the Mission. Over 150 houses had been added to the 30 or so of early 1846. (Hittell 1878: 107-113; Soulé 1854: 173-178) In the last twelve months before the **California Star** mentioned that gold dust was changing hands across the counter of the store at Sutter's New Helvetia (March 25, 1848), 86 vessels arrived in port, and San Francisco was already the commercial capital of California, whether there was much gold to be had or not. (Hittell 1878: 118, 119, 125)

There was, of course, more gold to be had than seen before in

history. About 30,000 gold hunters landed at San Francisco in 1849 and as many more reached California overland. The change in the town--"city" may already be the correct word--during the fall of 1849 staggered the contemporary imagination. Bayard Taylor, sent out from New York by Horace Greeley to cover the big gold story, arrived at San Francisco in September, 1849, aboard the Pacific Mail Steamer from Panama. His first impressions made good copy indeed, as did his descriptions of the mining districts. But even after four months of "seeing the Elephant," Taylor was unprepared for the transformation wrought by an army of entrepeneurs between September and December. His lead read: "Of all the marvelous phases in the history of the Present, the growth of San Francisco is one which will most tax belief of the Future. Its parallel was never known, and shall never be beheld again. I speak only of what I saw with my own eyes." (Taylor 1850: 147)

GOLD RUSH BACKGROUND: THE CHANGING FACE OF THE CITY FRONT . . . 1849-1857

The changes that occurred in the city face of San Francisco during the gold rush were written about with a sense of wonder and marvel at the energy and accomplishment of her citizens. No one saw it more clearly, or said it better than the gold rush journalist from the east, Bayard Taylor, who arrived in San Francisco in September of 1849, scrambling through piles of luggage, up barren hills, blown by the dusty wind, to a scene of total disorder and confusion in which the gold seekers lived in canvas sheds amongst piles of goods stacked about in the open air. He returned four months later to write:

> When I landed there, a little more than four months before, I found a scattering town of tents and canvas houses, with a show of frame buildings on one or two streets, and a population of about six thousand. Now on my last visit, I saw around me an actual metropolis, displaying street after street of well built edifices, filled with an active and enterprising people and exhibiting every mark of permanent commercial prosperity. Then, the town was limited to the curves of the Bay fronting the anchorage and bottom of the hills. Now it stretched to the topmost heights, followed the shore around point after point, and sending back a long arm through a gap in the hills, took hold of the Golden Gate and was building its warehouses on the open strait and almost fronting the blue horizon of the Pacific. Then, the gold-seeking sojourner lodged in muslin rooms and canvas garrets, with a philosophic lack of furnitureand ate his simple though substantial fare from pine boards. Now, lofty hotels gaudy with verandas and balconies, were met with in all quarters, furnished with home luxury, and aristocratic restaurants presented daily their long bills of fare, rich with the choicest

> technicalities of the Parisian cuisine. Then, vessels were coming in day after day, to lie deserted and useless at their anchorage. Now scarce a day passed, but some cluster of sails bound **outward** through the Golden Gate, took their way to all corners of the Pacific. Like the magic seed of the Indian juggler, which grew, blossomed and bore fruit before the eyes of his spectators, San Francisco seems to have accomplished in a day the growth of half a century. (Taylor 1850: 148)

But the magic that transformed the city face of San Francisco was not that of the Indian juggler, but the even greater American magic resulting from the application of a new flood of capital—gold from the mines, to meet the needs of a vigorous population heady with the promise of the present and marveling at the prospects of its immediate future. Among the more judicious chroniclers of the times, J. S. Hittell remarked, "The reality of the present was so extravagant that heads, cooled by long prudence in careful banking business, thought they could no longer judge the probability of the future by the scanty measure of the past." (Hittell 1882: 59)

And if there was one recurrent note that was underlined in letters of the gold rush period sent back east and repeated in accounts in the lively daily California press it was that everybody was in a hurry. Seemingly enormous tasks, such as leveling the hills to fill up the water lots, were accomplished so quickly that the statistics astonish the thoughtful reader today. Guesses as to the amount of leveling and filling that took place vary. Dow comments:

> There is no official figure on the amount of fill dumped into Yerba Buena Cove. However various estimates have been made. Hittell assumed that with a given area of 3,000 acres nine feet above or below the original surface, a transfer of twenty-one million cubic yards of fill was necessary, while Bancroft, calculating from the same assumption, arrived at twenty-two million cubic yards of fill. The San Francisco City Engineer, in his report of 1854, estimated fifteen and one-half million cubic yards of fill would be required to fill Yerba Buena Cove between the shore and the established waterfront line of the city. He based his calculations on the assumption that an average of twenty-one feet of fill would be needed to completely fill the cove. All of these estimates may be conservative, for when the city sold some of its property in Yerba Buena Cove in 1853, it was covered by twenty-five feet of water at low tide. This meant that

thirty-five cubic feet of fill was required to bring each square foot of property up to city grade. (Dow 1973: 47-48)

The official city grade was established by figuring 6.7 feet above the ordinary high water mark on a post that was placed at the boat stairs at the corner of Pacific and Davis Streets. Milo Hoadley and W. P. Humphreys prepared a system of grades in 1853, but some of Hoadley's recommendations met with serious disagreement. He had recommended "that the summit of Telegraph Hill, in the middle of the block bounded by Filbert, Greenwich, Kearny and Montgomery Streets would have to be cut down two hundred feet to bring it to the level of the surrounding streets. . . . It was his idea that this work would be done in the course of years, and that the rock taken from the hill would be in demand for filling water lots and for ballast. It was then considered especially important to provide ballast, for ships came full and went away empty." (Hittell 1878: 437) But a new board of engineers, while accepting "the Hoadley grades," as they were called, refused to level Telegraph Hill. This distinctive San Francisco landmark had contributed much of the rock that filled the land beneath it, but the citizens protested its loss and the engineers agreed. They were not adverse to cutting through hills when they felt it was necessary. Sansome Street was excavated forty feet to Vallejo, one hundred and twenty feet at Green; thirty-four feet were cut through at Union and fifty-six at Filbert. (Ibid: 438)

The engineering feat required to move the sand hills to fill the water lots developed into a lucrative business for James Cunningham, who was the first to utilize the steam shovel, or "Steam Paddy," which was a scoop that could dig up a cubic yard of sand or gravel (about a ton and a half, or twice as much as a horse could pull in a single wagon) and swing it around on a crane into a railroad car. From 1852 until 1854, and then again from 1859 until 1873 the Steam Paddy was a San Francisco phenomenon that sometimes moved 2,500 tons in a day. (Ibid: 434) The Steam Paddy and the filling of the land caused an annoying problem, "The cars laden with sand, ran on a railroad of descending grade along Battery Street depositing their freight from California to Clay Street. The stagnant water which accumulated in the docks above the newly formed streets, became very offensive, giving rise to immense quantities of

sulphureted hydrogen gas, which blackened the painted signs along Sansome and Battery Streets so as to render many of them nearly illegible." (Parker 1852: 20)

The changing of the city grade required that old houses already built below grade be raised. But this too resulted in a new business enterprise, in which a machine based on the principle of the hydraulic press was invented to lift up houses. Nine hundred brick houses--most of them in the business district--were raised to the new city grade using this machine.

Soulé comments on the effect of the filling on Yerba Buena Cove itself:

> The heart and strength and wealth of the city is contained within the little level space lying between the hills or rising grounds particularly mentioned, and the narrow waters of Yerba Buena Cove. These waters are yearly continuing to be encroached upon as the cove gets filled up with sand and rubbish, excavated from the sand-hills and the foundations of the limits behind, and as new streets and houses, formed on piles, are pushed further out into the bay. By these operations the old character of the cove has been completely changed, and at present, instead of the former semicircle of beach there is almost a straight line of building extending across the middle of the cove from Rincon to Clark's Point. In many places of what is now the very center of the business portion of the city lie large vessels, which in the disastrous years of shipping, 1848 and 1849, got stranded or were used as store-ships or lodging houses on the beach. When the extension of the city towards the waters of the cove took place, these ships remained where they lay, fast imbedded in mud, while long streets, hollow beneath, and numerous solid houses arose on every side, effectually to hem them in forever.
>
> The deepening water will prevent the city from moving much further into the bay, while the steep rising grounds in the rear will equally prevent it from climbing and spreading over the sandy, irregular country beyond them. (Soule 1854: 160)

In addition to the engineering problems of creating filled land as the shoreline moved eastward from the position shown on the Coast Survey Chart of 1853 (Map 1) towards the new line shown on the 1859 Chart (Map 2), there were problems of materials for building the piers and planking the streets. "New Streets were formed upon piles further out into the bay across which the piers and wharves were shooting like the first slender

P 1~U.S. Coast Survey, 1853

lines of ice." (Soulé 1854: 360) If San Francisco's shores were noticeably short of wood, the hills of Oakland and Marin were not.

The most accessible big trees for pilings were probably those redwood trees on Richardson's Bay in Marin County. As early as 1836 John Reed had established a mill and was supplying lumber. In addition to Reed's early mill in Marin, the Russians had a lumber mill at Bodega that was later owned by the captain of the brig **Sabine**, who brought lumber and pilings to San Francisco. Harry Meiggs had a mill in the same area after 1850 and later built another in Mendocino. (**Alta California**, April 24, 1882) However, pilings were already coming in by ship from the further reaches of the Pacific Coast.

Captain William Talbot brought the **Oriental** into port in 1849, and having disposed of his load of gold seekers headed up the northwest coast to Puget Sound to return with a load of pilings and lumber that marked the beginning of the Pope and Talbot Lumber Company, which was still running its own Puget Sound Packets up and down the coast to San Francisco as late as 1960. (Coman & Gibbs 1968: **passim**) Pilings of sugar pine and Douglas fir were being brought into San Francisco in the 1850's from Humboldt County on a regular basis. The size of the big Douglas firs made for first-rate pilings, just as they were also exported to England to be used for masts in sailing ships.

It is impossible to estimate the number of pilings that were put down (and sometimes pulled back up) during the 1849-1857 period. Captain Lawson describes employing as many as three hundred men driving piles in his water lots at night--which piles the wharf company would pull up again the next day. (**Examiner**, August 31, 1890) The descriptions that Lawson and others give of the feverish activity of pile driving, together with examination of the gold rush daguerreotypes of the harbor structures, would make any estimate futile.

Although many of the hastily put down piles rotted and were removed, or were replaced by various property owners trying to settle disputed water lot claims, some pilings were left in place, filled in, and survived--as this newspaper account of about 1879 describes--in an excavation at Peter Donahue's Union Iron Works:

> The wharf piles, which for a quarter of a century have been buried under the floor of the Union Iron Works, have been uncovered for several feet, and are as solid and firm as iron. The piles are of sugar-pine, black with age and the action of the water and iron fillings, in which they have been buried for years. When the wharf was built (1849) iron spikes were too expensive in San Francisco to be used, so the tops of the piles were mortised and the stringers fastened on the mortises by slots. The excavations show the spike-saving mortises in perfect condition. These piles were covered with sand from a big sand dune on the opposite side of Mission Street, and over this sand and mixed in with it was a great quantity of iron fillings, slag from the old Donahue furnaces and quantities of old scrap iron. The mass had become almost solidified in the quarter of the century in which it had lain undisturbed and the contractor who is excavating the ground and who thought he would have only to dig out soft, moist sand, has had to make a plentiful use of dynamite in the work. (SFMM Scraps)

The **teredo navales**, which proved to be the scourge of wooden marine structures in a later period, was not present during the gold rush. It is believed that this tropical sea worm was imported from the South Pacific some time during the 1860's. But worms or not, the pilings of the gold rush wharves were in a constant stage of collapse and removal and replacement. Occasional cargoes--usually bulk shipments of such things as coal and lumber--might be temporarily stored out in the open, and these were reported to have been sometimes dumped in the bay as parts of the wharves collapsed from time to time.

As we look at the 1853 daguerreotype (Plate 3), taken just three years after Bayard Taylor's descriptions, we see in the distance a city of brick and masonry, of granite and of stone--at least in the downtown section. We are looking at a city that has already been swept by five great fires since Christmas of 1849. We might well wonder where the builders of the city--the men who were in such a hurry--got the bricks, the glass, the granite, the iron shutters, the corrugated roofs.

Bancroft tells us, "Brick fields were established, yet bricks came from the cheaper and superior sources of Australia, New York, etc., lava from Hawaii, granite from China." (Bancroft 1888: v. 7, 776) Again an examination of the cargoes of some gold rush ships arriving in the 1850's gives us an idea of the sources of at least some of the building materials.

The **Watoga** sailed from Philadelphia and in 195 days reached San Francisco, on June 17, 1850, with a cargo of 300 tons of coal, 80,000 bricks, and 20 houses. The **Laura**, a British bark from Sydney, arrived July 28, 1850, with 287 tons of coal, 1 house, 10,000 feet of cedar, 7,680 feet of pine, 5,700 bricks, 402 barrels of lime, 1 boat, 1 case of oysters, 39 cases of beer, 7 cases of cider, 2,100 bushels of bran, 3 boxes of tobacco, 1,500 bushels of oats, and 18,000 feet of hardwood. The **Patagonia**, a British ship, left Liverpool and 228 days later arrived in San Francisco on August 11, 1850, with 27 iron houses, 5 wooden houses, 15,000 fire bricks, 50 cases of wine, 134 casks of bottled beer, 50 kegs of brandy, and assorted ironware. The bark **Ellen Noyes** arrived from Boston on October 10, 1850, with 2 steam engines and appurtenances, 100 tons of coal, 46,500 bricks, 236,280 feet of lumber, white lead, lime, cheese, free stone, oilcloth, scales, codfish, and assorted goods. The **Courrier de Inde** left Le Havre for San Francisco, to arrive 180 days later on June 2, 1852, with 318 iron pots, 9 packages of wormwood (used in making absinthe), 10 cases of snuff, 50 boxes of peas, 30,000 bricks, wine, brandy, cheese, and baskets of champagne. (Rasmussen 1966: **passim**)

Bricks were imported and made locally, although the brickyards mentioned by Bancroft do not appear in the city directories of the period. English and European brick were generally considered a superior grade. The big iron doors and shutters made popular as "fire-proof" measures were made at Peter Donahue's Foundry as early as 1849, but they were also imported, as the cargo lists of both the early gold rush ships and later clipper ships attest. Glass was in short supply, and all of it was imported during the gold rush. San Francisco's first glass works manufactory, the Pacific Glass Works, started in the Potrero in 1866. (Bancroft 1888: v. 7, 63)

Brick and stone and granite were preferred for business houses, with the warehouses being chiefly made of brick. The reason for this was the terrible business losses that occurred in San Francisco's repeated experience with fire. As wooden structures, including many of the storeships in the cove, were consumed almost at once, the presence of brick and masonry buildings did act as a deterrent. But this was not

always the case, as **The Annals of San Francisco** records the great fire of May 4, 1852:

> The anniversary of the **second** great fire was signalized by the **fifth**, the ravages of which perhaps exceeded, in gross amount, those of all the fires together that had previously taken place in the city. For eight months the inhabitants had enjoyed comparative immunity from conflagration. Although single houses had caught fire and been consumed, it was not believed that such a dreadful calamity could come as that which now happened. A considerable number of buildings, which were supposed fire-proof, had been erected in the course of the preceeding year, the solid walls of which, it was thought, would afford protection from the indefinite spreading of the flames, when fire should unhappily break out in any particular building. But all calculations and hopes on this subject were mocked and broken. The brick walls that had been so confidently relied upon crumbled in pieces before the furious flames; the thick iron shutters grew red hot and warped, and only increased the danger and insured final destruction to everything within them. Men went for shelter into those fancied fire-proof brick and iron-bound structures, and when they sought to come forth again, to escape the heated air that was destroying them, they found, O horror! that the metal shutters and doors had expanded by the heat and could not be opened! So, in these huge, sealed furnaces, several perished miserably. . . . Eighteen entire squares, with portions of five or six others were totally destroyed. Only five of the brick buildings on Montgomery Street escaped. . . . The burned district extended about three-fourths of a mile from north to south, and one-third of a mile from east to west. In this space was comprehended the most valuable part of the city, and where the most precious goods and merchandise was stored. All was destroyed! The damage was moderately estimated at from ten to twelve million dollars. In the conflagration some of the old store-ships that had been hauled high upon the beach and gradually closed in by the streets growing over the bay, were consumed. . . . While the city lay one vast black and smoking tract, preparations were made to erect new buildings. . . . But another fire was yet to come. (Soulé 1854: 331-333)

After the sixth great fire on June 22, 1851, the writers remarked that many of the buildings erected showed a wonderful improvement in strength and grandeur. It was believed that if any building could be made fire-proof in the most trying circumstances, many had now been made so in the city. "Solid brick walls, two and three feet in thickness, double shutters and doors of malleable iron, with a space two feet wide between

them, and huge tanks of water that could flood the whole building from roof to cellar seem to defy the ravages of the future conflagration." (Ibid: 345)

These are the buildings to be described in subsequent sections on the gold rush wharves and warehouses, as well as in the section of the warehouse district at the time of the 1887 Sanborn maps. It is an interesting note that Bancroft accounted for the fact that so many residences were made of frame rather than brick because of the fear of earthquakes. His description of San Francisco in 1853 is worth repeating:

> It was a straggling city, however, with its dumps and blotches of hills and hillocks, of bleak spots of vacancy and ugly cuts and raised lines. The architecture was no less patchy, for in the center prison-like and graceful structures alternated, interspersed with frail wooden frames and zinc and corrugated iron walls, and occasionally the hull of some hauled-up vessel; while beyond rude cabins and ungainly superimposed stories of lodging-houses in neglected grounds varied with tasteful villas embowered in foliage, and curious houses perched on square-cut mounds. For a time caution set the fashion for residences also of brick but the winter rains, the summer fogs and above all the cost and the startling admonition of earthquakes soon created so general a preference for frame dwellings of all grades, as to make brick dwellings a rarity. . . . Wood affirmed its supremacy by yielding more readily to the growing taste for elaborate ornamentation. (Bancroft 1888: v. 6, 778)

As the background for understanding the changing face of San Francisco's north waterfront during the gold rush, we have freely used the observations of the most able historians and journalists of the times, but it seems that J. S. Hittell has the right to the last word:

> The men who took part in most of these wonderful changes, and witnessed all of them, feel that California, and especially San Francisco, has an interest for them such as no other country or city could have acquired, in our age at least, nor do they lament that they did not live in some better time in the remote past. No golden era of romance or chivalry, no heroic period of Greece or Rome provokes their envy, or, in their conception, outshines the brilliancy of the scenes in which they have been actors. This is the very home of their souls. (Hittell 1878: 8)

P 1-A~ *Capt. Harrison's Sketch of the* BELFAST, *Sept. 1848*

GOLD RUSH PERIOD . . . 1848-1857

The Early Gold Rush Waterfront (1848-1852): In September of 1848, when most of the population of the village of San Francisco was scrambling for gold in the foothills of the Sierra, Captain Augustus Harrison of the brig **Belfast** drew a map of the town and the shipping in the harbor (Map I-A). His drawing shows a milestone in the development of the port, for he has placed his own vessel against the end of a little wharf extending from the foot of Broadway. This was the first time an ocean-going ship lay up to any kind of pier structure in San Francisco. The experiment may not have been repeated, for the mooring was awkward and the brig probably lay on the bottom at low tide. This Broadway Wharf of 1848 was more properly a landing for small boats or lighters than a wharf for shipping.

In the months immediately following Harrison's experiment, ships began arriving from Oregon, Hawaii, and the west coast of South America in response to the spreading news of the gold discoveries. In the eastern United States the news bounced from journalistic rumor to official confirmation when Colonel Mason's report from the mining region, together with a large quantity of samples, arrived in Washington, D.C., in time for President Polk's annual message to Congress on the State of the Union on December 10, 1848. It was not until April that the first of the Argonauts from the east arrived in port, not until mid-summer and fall that the trickle of ships became a flood. At the end of the year a total of 549 vessels had cast anchor in Yerba Buena Cove from United States,

Pacific, and European ports bearing an estimated 35,000 gold seekers. (Hittell 1878: 139-40)

The mercantile interests of San Francisco were not long in providing port improvements to handle the vast quantities of goods and equipment from the East that were required by a central California population that was increasing at an average of 5,000 people a month. The first pier adequate to handle ocean commerce was the Central Wharf (Long Wharf) projected along the line of Commercial Street in April of 1849. The section completed by the end of that summer from the shoreline between Montgomery and Sansome Street extended out to the line of Battery Street. This wharf extended the block of water lots owned by Mellus and Howard, one of San Francisco's leading merchant firms, and from the first it was assumed that filling and development would take place alongside the wharf and that the wharf would be subsequently extended further into the bay. Before the end of 1849 the wharf was extended another block to Front Street, the wharf company having acquired title to the lots on either side. In 1850 the wharf was pushed out to Davis Street in cooperation with Colonel J. D. Stevenson and Dr. W. C. Parker, who had gained title to this next block of water lots. (Davis 1889: 331-332) Plate 2 is a quite accurate on-the-spot drawing of the progress of the city and the state of the waterfront shortly before the fire of May 3, 1850. Central Wharf is the long wharf at the center of the drawing (1). The store ship **Niantic** lies alongside the adjacent short Clay Street pier to the west of Sansome Street (2). As can be seen, many buildings have been constructed on the water lots adjoining Central Wharf eastward from Sansome Street (3).

The extension of this wharf, the rapid filling of the water lots on either side, the enclosure of store ships in the subsequent fill is fairly typical of the early projection of the city into the shallow waters of Yerba Buena Cove. Regarding the waterfront scene of this time, William Heath Davis remarked:

> From the time of the building of the first portion, the [Central] wharf became an important feature of the city: and in the winter of 1849-50 it presented a scene of bustle and activity, day after day, such as, I presume, hardly has been equalled elsewhere in the world at any time. An immense fleet of vessels from all parts of the globe, num-

> bering eight to nine hundred, were anchored in the bay, east of the city, between Clarke's Point (now about Broadway Street) and the Rincon (now about Harrison Street), presenting a very striking picture--like an immense forest stripped of its foliage. The Central Wharf being the only one in the city, was the thoroughfare for communication with vessels, and was crowded from morning 'til night with drays and wagons coming and going. Sailors, miners, and others of all nationalities, speaking with great variety of tongues, moved busily about; steamers were arriving and departing, schooners were taking in merchandise for the mines, boats were crowding in here and there--the whole resembling a great beehive, where at first glance everything appeared to be noise, confusion, and disorder. (Davis 1889: 333-334)

Central Wharf was at that time being projected toward the C-3 contract alignment. The Coast Survey Chart of 1852 shows that the end of Central Wharf had reached the C-3 alignment by February of that year, the date of the final survey information. The 1853 Coast Survey Chart, which presents information updated from February of 1852 (though the legend does not say so), shows not only Central Wharf, but the Market Street wharf extending about 200 feet beyond the alignment (see Map I). The bottom depth alongside these wharves at this tme was far below the depth that will be reached by the C-3 excavation, as can be seen from the soundings on the chart. The original shoreline of the cove is represented by a dash-and-dot line crossing Market Street at First, California Street near Sansome, and reaching about 50 feet westward of Montgomery Street at Jackson, where there was the small tidal lagoon that shows clearly on Captain Harrison's map (Map IA).

Gold Rush Hulks: In 1849 all kinds of vessels capable of any kind of deep-water passage (and some others, too) were pressed into service to make at least one big one-time profit on a passage to San Francisco. As the ships arrived in port, the crews deserted for the same destination as the passengers, and a sharp captain quickly found other interests than that of putting back to sea.

The summary of this phenomenon is summed up in **The Annals of San Francisco,** referring to July 1, 1850, as follows:

> From the shipping lists published in the daily newspapers, it appears that about this time there were five hundred and

twenty-six vessels lying in the port, the greater number of which were ships and barques, the remainder being brigs and schooners. Besides these, there were at least one hundred large square-rigged vessels lying at Benicia, Sacramento, and Stockton. Long before this time many of the old seamen who had deserted their ships had returned from the mines, and there was no difficulty in procuring crews for departing vessels, upon paying them the ordinary high wages of the time. (Soulé 1854: 281)

A half-dozen daguerreian panoramas taken between April of 1850 and the middle of 1853 confirm the comments of the annalists. The abandoned gold rush ships rapidly disappeared from the crowded anchorage in Yerba Buena Cove as a degree of economic normality returned. Most of the great fleet put back to sea. Most of the ships that were not fit to engage in ordinary commerce were broken up for their wood, and particularly their yellow metal fastenings. The ship-breaking business centered at Rincon Point, and the following story from the **Daily Evening Bulletin**, February 11, 1857, demonstrates clearly the economic interest in removing and destroying unseaworthy hulks, rather than leaving them to sink to the bottom of the cove.

The beach at the Rincon exhibits a scene which recalls the past in a most affecting manner. In almost every portion are to be seen the relics of old ships, that once braved the storms and dangers of a hundred seas, being broken up for their old iron and fire wood. This work is carried on chiefly by Chinamen, who hammer and saw and chop, day after day and week after week, with the most exemplary patience and perserverance. Under their continued blows and old vessels fall to pieces, one after the other. For a few days the yawning wrecks and then the bare skeletons of keel and ribs are seen; but in a short time the skeletons themselves fall to pieces; the iron and copper are stored, the wood piled up and carried away, and not a vestige of the once mighty masters of the deep remains.

This business of breaking up old ships was commenced in the early times of the year 1850, when great numbers of disabled vessels were left lying in the harbor to rot, deserted by their crew. The better class of them were used as storeships; the worse broken up immediately; and, since then, the work has been steadily progressing, until the number that has fallen is astonishing. As years progressed, more victims would be given over to be broken up, and there are even now several new candidates for this process lying out in the bay, still fully rigged and provided, though essentially unseaworthy. One of the first who commenced the business

was Mr. Charles Hare, who had been engaged in the same business, before his advent to this country, in Baltimore. He came hither in 1850, and shortly after his arrival, established a house for the sale of old iron and copper, cordage, and other ship materials, at the Rincon, where he still remains, and shortly afterwards commenced buying and breaking up old ships and hulks. He, by degrees, increased his business, employed numerous hands, chiefly Chinamen, and many have been the vessels that have yielded up to him their metals and timbers. In various instances, however, the Chinamen themselves have purchased old vessels, and demolished them at their own venture, and others have, from time to time, tried their fortunes at the same kind of occupation. But Hare has stuck to the business, and is still pursuing it with success. He says, however, that the business must soon all but stop, for want of material, as the old stock of vessels is almost used up, and the decreased importing shipping will not afford old tubs enough to keep any great number of workmen busy.

The article above continues with a catalog of sixty-eight gold rush ships remaining in the port in one form or another, and in the opinion of its writer the list did not include more than half of the vessels broken up in the preceeding years.

A portion of a panorama made in 1853 (Plate 3) shows the condition of some of the laid-up shipping. The view was taken from Rincon Point, looking northwest across Yerba Buena Cove to Telegraph Hill (right background). At the left, waterlots have been marked out and one is occupied by a roofed-over hulk (far left). Near the center (1) is a partially roofed storeship. Closer in (2) is a nearly worthless hulk with the legend "STORAGE" painted on her bulwarks--probably a leftover message from the "old times" of three years before, when such floating warehouses were essential to the conduct of business. A more properly converted shoreship is seen at (3), built up and roofed over so as not to expose warehoused merchandise to the perils of a leaky deck. In the foreground (and elsewhere) are some excellent candidates for the Rincon Point shipbreakers. Though the cove appears jammed with shipping from this point of view, other pictures show the active wharf area across the way comparatively clear of the "forest of masts" of 1850 and 1851.

While most of the gold rush ships put back to sea, and while most of those that remained were broken up for salvage, research by the San

Francisco Maritime Museum has located forty-two vessels used as shoreships or for other purposes that may exist in the form of some kind of remains (for example, burned to the waterline or partially broken up on the site) within the present limits of the filled land of Yerba Buena Cove, between Montgomery Street and the Embarcadero. Remains of these vessels have been turning up in the course of excavations at least since the uncovering of the famous storeship and hotel **Niantic** in 1872.

The C-3 alignment passes through the right-hand portion of the scene in Plate 3, from a point in the middle distance at the far right to a point slightly to the right of where Telegraph Hill meets the water (Telegraph Hill is to the right of center, with the building on the very top). Plate 4 is from a panorama, also made in 1853, from the western shore of Yerba Buena Cove. The daguerreotypist was standing on the eastern edge of the 60-foot sandhill that marked the line of Howard Street. The end of Howard would be in the notch between the two small sandhills in the foreground occupied by the posing citizens. First Street is seen at the left. The C-3 alignment is about 500 yards from the camera at First and Howard--approximately at the outermost line of ships. At the left, near the foot of the Market Street wharf, several ships can be seen that are clearly permanent residents, enclosed (or nearly so) by encroaching piers and walkways. At the right is the same ark (ship converted into a house) that appears at the left in Plate 3. However, these and some other vessels that appear to be sunk are far inside the C-3 alignment. Photographs of 1855 and '56, made after the cove had been bridged by Steuart Street, show only a few hulks in this area. The San Francisco Maritime Museum staff has plotted 28 vessels beached or scuttled in the cove south of Jackson Street (only four of them south of Market Street). Witnout doubt there were others--pieces of vessels not identified on the Maritime Museum map have turned up in such recent construction sites as the Embarcadero Center--while on the other hand, photographic evidence suggests that some hulks were removed or perhaps broken up on the spot.

Of the hulks identified, only two were close enough to the C-3 alignment to allow some speculation as to the possibility of their actually

Plate 3: Yerba Buena Cove from Rincon Point, 1853 . . . A closeup of some of the ships laid up or "abandoned" in the gold rush years is seen in these sections of a panorama looking toward Telegraph Hill. A typical storeship is seen at (1). A worthless hulk with the hopeful message "STORAGE" lettered on its bulwarks, is at (2), obviously in no condition to receive goods. A neatly-roofed vessel is seen at (3), while just below, in the foreground, is a ship that (like many others in this photo) will most probably wind up in the hands of the shipbreakers at Rincon Point. The C-3 alignment would enter this picture in the middle distance at the far right. (San Francisco Maritime Museum)

Plate 4: Yerba Buena Cove from the foot of Howard Street, 1853 . . . Four out of seven parts of a daguerreian panorama of 1853 are seen here. The view was taken from the end of the ridge of sand that marked the line of Howard Street. At the left, we are looking north on First Street, toward Telegraph Hill, through the "Happy Valley" district occupied by the mechanics, craftsmen, and laborers of San Francisco. The Pacific and the Vulcan founderies are on the shore in the next section. Market Street is shown by the different angle of the buildings at the end of First Street, and the line of the Market Street Wharf is through the nearer edge of the densely-packed ships. The crossing of First and Howard Streets is the dip between the small dunes right of center. Staked-out waterlots extending north from Rincon Point are at the right. The C-3 alignment crosses the cove on the far side of most of these moored vessels. (California Historical Society)

being encountered by the sewer excavation. These are the **Elizabeth** and the **Rome** (or **Roma**). These vessels were sunk by Captain Fred Lawson to enhance (by physical possession) waterlot titles on the city front deriving from the questionable "Peter Smith sales" of 1851. A fuller description of both the Peter Smith titles and Lawson's operations will be found in the Report on the N-3 (North Embarcadero) area.

Captain Lawson sank the **Elizabeth** on the line of East Street, between Clay and Merchant Streets. His precise words--as transcribed by a reporter for the San Francisco **Examiner** of August 31, 1900--were that she lay "one hundred feet along East Street." Perhaps he meant that she was scuttled parallel to the property line and was about 100 feet long, an interpretation that accords with the purpose of establishing the outer edge of his property in the face of certain objection by the proprietors of the nearby wharves, as well as with the probable length of this English bark. This location, which we may be certain that Lawson recalled with accuracy at least insofar as his intentions were concerned, is about 130 feet west of the C-3 alignment. At the time he sank the vessel (1852), he would have been able to line her up with Merchant and Clay Streets easily enough, but might have had some difficulty in determining the theoretical East Street line with equal precision. However, two factors seriously militate against the **Elizabeth** lying some 130 feet east of Lawson's property, in the way of the C-3 excavation: 1) This position would have placed her almost touching the north side of the outer end of Central Wharf, a situation not likely to have been endured by the wharf proprietors; 2) The location along the alignment, as seen on the 1857 Coast Survey Chart, is outside of the city front and right in the way of the Clay Street wharf. It would seem almost certain that the **Elizabeth**, if she was not removed shortly after Lawson sank her, is well to the west of the alignment and separated from it by the 1868 seawall.

The second ship that Lawson scuttled near the C-3 alignment was the **Rome** (also listed as **Roma** in contemporary lists of ships in the port). Lawson recounted that he provided this service not on his own account, but as a consulting professional. Joseph Galloway approached him one morning with the offer of $5,000 if he could put down a ship at the

southwest corner of Market and East Streets by noon. The job was done, and Lawson told the newspaper reporter in 1890 that the **Rome** was to that day lying right under the Ensign Saloon. The Ensign appears in Plate 30, which shows the foot of Market Street as it appeared around the time Lawson was interviewed. This location is about 200 feet west of the alignment. However, there might be some question as to whether the theoretical southwest corner of Market and East Streets was in 1852 at the site of the Ensign--the corner as it historically developed--or at the corner that would have obtained if the block between East Street and Steuart were the same depth as the blocks behind. "Official" maps of the period illustrate both possibilities. Indeed, Map 2 in this report (the 1859 Coast Survey Chart) shows the "Line of Established City Front" conforming to the "full depth" block. This location would place the **Rome** about 70 feet from the alignment--close enough to introduce the suggestion that she might be encountered in the course of the C-3 excavation. The difficulty with this assumption is that reference to the 1859 chart (Map 2) would indicate that the **Rome** would then have been lying right at the head of the slip alongside the Market Street wharf, where she would have been an obstruction.

The same may be said for the position as it appears on the 1869 chart (Map 3) and for the 1877 chart (Map 4) as well. In order to entertain the notion that the **Rome** may be impacted by the C-3 excavation we must presume that for upwards of 20 years this hulk lay in plain sight at low tide at the foot of a busy slip between two piers that were rebuilt or improved more than once during the period.

Because of the high level of interest in the possibility of encountering old ships during the course of the North Shore and Channel Outfalls Project construction, we have given particular attention to all references to hulks anywhere near the alignments. None of the ships known to have been sunk or otherwise "permanently" installed near the alignments appear at all likely to exist at the present time in the way of the line of excavation. There is no doubt that hulks not noted in sources available to us underlie the fill of Yerba Buena Cove--construction excavations in recent years have proved that. But the probability of encountering a gold rush hulk at, say, Davis and Sacramento Streets is

Lincoln Point
Buoy
Mark
Sand
Stone
Rocks
Mud
Shell
Grass
Marsh
Trees
Fence
Wharf
Pier
Bridge
Road
Street
Creek
Ditch
Swamp
Sandy Beach
Stony Beach
Mud Flat
Sand Flat
Shell Bank
Grass Bank
Marsh Bank
Rocky Bottom
Sandy Bottom
Mud Bottom
Shell Bottom
Grass Bottom
Marsh Bottom
Stony Bottom
Rocky Beach
Sandy Beach
Mud Beach
Shell Beach
Grass Beach
Marsh Beach
Stony Beach

vastly higher than the probability of such a find along the more easterly N-3 and C-3 alignments. The reason for this conclusion is simply that the sewer line generally follows the line of active maritime operations of the 1850's, '60's, and '70's. The inland area was filled in right over storeships and other hulks, but along the sewer alignment there was continual dredging and wharf-building. The C-3 alignment between Jackson and Howard Streets runs outside of the old seawall of the late 1860's (except where it crosses it at Jackson Street). If hulks lie there, they would (as in the case of the **Rome**) have been visible for a long time and would have been public nuisances. The parts of Howard Street and Steuart Street along the alignment were themselves wharves in the 1850's and '60's--streets built on pilings. Any hulks in the way when these "streets" were put in or renewed would have been removed, for the same reason that old piles were pulled in the course of wharf reconstruction--so that the pile driver could be floated in. But while the evidence that no gold rush hulks lie along the C-3 alignment is rather extensive and pursuasive, it cannot be accounted entirely conclusive. Regarding the probable historic value of such a find, a brief analysis will be found in the Report on the N-3 alignment.

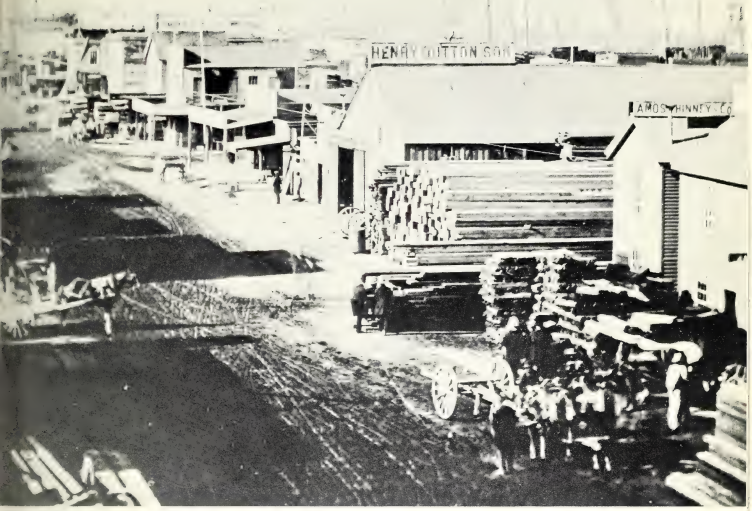
Bridging Yerba Buena Cove: Map 1 shows the waterfront along the C-3 alignment as it looked in 1853; Map 2 shows development as of 1856. We use here the 1859 issue of this latter Coast Survey Chart, as it includes the soundings made after the original 1857 issue, as well as the official line of the city front.

It will be seen that by the time of the 1856 survey the C-3 alignment across the mouth of the original cove was entirely built up by wharves. This dramatic change in the waterfront took place very shortly after the daguerreotypes shown in Plates 3 and 4, and was part of the building boom of 1853-54 that quite transformed the appearance of the city. Starting with the Parrott Block of 1852, with its granite facing imported (together with the masons) from China, San Francisco's newly rich merchants competed with one another in the erection of business blocks much more elaborate than the utilitarian houses of 1850 and '51. By 1856

the photographer Fardon used the new wet-plate negative process (which permitted making multiple prints for sale) to make some three dozen portraits of the most impressive new buildings for the edification of unbelieving easterners. One of his more interesting views is shown as Plate 5. Beyond the Rincon Hill octagon house in the foreground are the remains of Yerba Buena Cove, enclosed by Steuart Street and its associated slips and wharves. The boom of 1853 had disappeared in the bank failures of '55 and it was to be several years before much more reclamation took place in this area. The gas works--the effluent from which gave the place the name "Tar Flat"--is at the far right, at First and Howard Streets.

Steuart Street was declared open by a city ordinance of March 6, 1854, which may or may not mean that the structure of the street was complete, for on the same date $1,000 was appropriated for piling, capping, and planking the crossing of Howard and Steuart "in a substantial manner." Both photographs and references to street work show that Steuart Street was all on pilings; indeed, small boats, which must have gained access to the bay by passing underneath the street, can be seen in photographs. East Street was simply a line on the maps, passing through the numerous wharves projecting from Steuart Street. The area was then, as in later years, devoted heavily to the lumber business, and the 1856 city directory lists over two dozen lumber dealers on Steuart and adjacent streets. At the same time, a few other maritime-related businesses occupied quarters on Steuart--such as boat building and ship chandlery. Mills and foundries were located along the original shoreline at First Street; the Vulcan and the Pacific foundries and the Sutter Iron Works can be seen in Plate 4.

It is probable that all of the refuse from the business operations along Stueart Street and its wharves was swept right into the bay. The construction of the street and piers led to very rapid siltation: as maps 1 and 2 show, between 1853 and 1857 the depth of water along the alignment from Market Street to Rincon Point decreased from 12-18 feet to around three feet on the pier line (just enough to float a lumber carrier at high tide), and we may presume that under the planks of Steuart Street there was no water at low tide. Thus, all kinds of discarded or lost materials



late 6: Steuart Street, 1867 . . . A closeup of the street of lumber merchants ives the flavor of the scene when Steuart Street was the waterfront thoroughfare outh of Market, East Street not yet being a roadway of any sort. The photographer as looking north from between Howard and Mission. (Huntington Library)

late 5: Steuart Street in 1856 . . . teuart Street was a new wharf idging Yerba Buena Cove when ardon made his views of the city hat placer gold had finally built. utting out from Steuart Street which traverses the background) ere short piers built by the umber dealers. The remnant of he cove, visible between the Main treet bridge and Steuart, was low to be filled. (Bancroft ibrary)

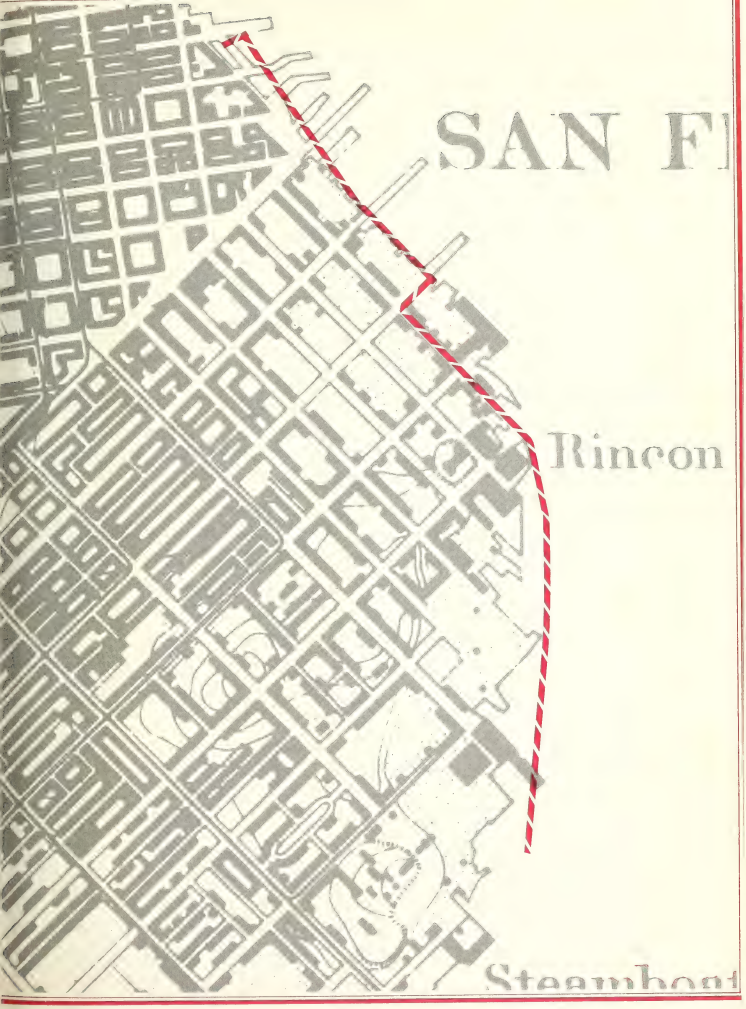
from the mid-1850's may lie in the top of the bay mud, except at points that may have been dredged or were impacted in the construction of the seawall in the late 1860's. (This latter construction may have removed anything to be found along the alignment between Market Street and Howard.)

As to the real probability of the excavation in this central part of the C-3 alignment turning up cultural materials of the gold rush period, it seems clear that the excavation for the 36-inch force main between the Foot of Market Street and Howard and Steuart Streets is so shallow that it passes entirely through fill and that any cultural materials would be random objects originally located in the sandhills back of First Street that probably provided the later fill. Along Steuart Street, between Howard and a point about 200 feet south of Folsom Street, the excavation does reach below the probable mud line of 1856-57. However, the profile based on recent soils-test borings puts the bay mud line below the invert profile of the sewer. (Woodward-Clyde 1975: fig. 2) Probably this is the result of the fill compressing the underlying strata.

A note regarding this fill of the 1860's is here appropriate with regard to the possibility of gold rush artifacts being found in it. The research of Gerald Dow turned up only the references to the Steam Paddy digging out the sandhills of Happy Valley, from whence a dinky railroad carted the sand over to the downtown district north of Market. These sand dunes were immense, and can be seen clearly on Map 1. Market Street, Mission Street, and Howard Street each had its 60-to-80-foot ridge, and it is likely that the Howard Street hill wound up in Tar Flat, together with all of the superficial cultural debris that it would have accumulated in the early days of the Happy Valley settlement. Map 2 shows this hill to have been largely removed by 1856 and built over with small houses. Fill at Steuart Street took place later, perhaps utilizing a less promising source of interesting cultural debris. Test boring #18, made by Woodward-Clyde in 1975 on Steuart Street between Folsom and Harrison Streets, showed about 17 feet of fill composed of brown, silty sand, with bricks, wood fragments, and slag, together with a layer of black, silty sand with organic matter.

Along the City Front, 1857: The heavy line on Map 2 shows the approximate location of the C-3 alignment at a date when the city front had reached the alignment along its northern half--from Jackson Street to Rincon Point. The alignment transects all of the major wharves (and most of the minor ones). Commencing in the slip along the south side of the Jackson Street wharf, it cuts across the inner ends of the Washington, Clay, Commercial, Market, and Mission Street piers. The little lumber wharves extending eastward from Steuart Street were named for their proprietors. The 1856 city directory lists only four of these wharves, Abernathy's, Dockham's, Roussett's, and Ryan & Duff's; the 1858 directory gives us Abernathy's, Clark & Company's, Brannan's, Brenan & Batchelder's, Felt's, Mastick's, Pennell & Brown's, Pope's, Roussett's, and Smith's, together with a long wharf at Howard Street and a Pacific Mail Steamship Co. occupancy on Folsom Street. Next to the Folsom Street wharf on Map 2 one finds what appears to be a wharf warehouse on the west side of the alignment. Between Folsom and Harrison is what must have been a new dock at the time of the survey--a large, square platform with a small shed on it. This was the location of one of several "Rincon Warehouses," probably built immediately after the survey for this chart. On the southeast side of Rincon Point, and about 150 feet from the alignment is "Hathaway's Warehouse," a one-story structure built on the pier and occupied by Hathway & Co. and I. H. Ham, both firms of commission merchants. (Le Count & Strong 1856: 58) A curious feature is associated with this structure: the two hulks lying alongside the end of the wharf that are outlined on the map. These are indeed hulks, because they are so identified on the manuscript soundings map of 1857 used in preparing the 1859 issue of this chart. Nothing that looks like a hulk can be seen in the woodcut illustration in Hathaway's 1856 directory ad. Presumably these vessels were sunk as a more or less integral part of the structure, probably to protect the pier from the force of the southeast gales common in the winter months. Further comments on Hathaway's docks and warehouses will be found in following sections of this report.

As can be seen by Map 2, after leaving the vicinity of Hathaway's, the alignment runs far offshore of any structure of the period. The appearance of this South Beach Area as late as the mid-1860's is seen in Plate 9, a view looking from Steamboat Point at Second Street to Rincon Point, the Marine Hospital, and Hathaway's.



AP 3~ U.S. Coast Survey, 1869

FILLING IN AND BUILDING UP . . . 1858-1887

Just as the face of the city front changed entirely between 1853 and 1856, a second spurt of building between about 1865 and 1869 again changed the configuration of the front--and the potential archaeological resources of the C-3 contract area. More or less continual change took place after 1870, without any such convenient dates to bracket periods of development, for the modern seawall that encloses the entire alignment was built in sections over a period of 30 years. We here choose 1887 as a benchmark, because in that year the first section of the new seawall to affect the C-3 alignment was built and because that is also the date of the earliest complete set of the Sanborn Insurance Maps available to us.

Two maps of this period (other than the 1887 Sanborn set) best show the geographical development of the area. One is the 1869 Coast Survey Chart, which is based on survey work completed in 1867 and '68 (Map 3). This is the last of the Coast Survey Charts that seriously attempt to show anything but the outline of the wharves and other matters relevant strictly to navigation with completeness and accuracy. For instance, the 1884 chart, which was completely "new," rather than a reissue, shows exactly the same buildings between the foot of Second Street and the foot of Beale Street as does the 1869 chart, only the piers themselves being shown differently. The city has just grown too much since the great Coast Survey charts of the 1850's for it to be any longer practical to show every building and other feature on maps that were after all basically intended for navigational use. Even the 1869 map,

because of its scale and the quantity of information it attempts to cover, cannot be considered as reliable in some ways as the 1852, '53, '57, and '59 charts. The other map we call attention to here (Map 4) is an 1877 manuscript map prepared by the engineer of the Board of State Harbor Commissioners in 1877. It may be taken as showing all of the wharves and a considerable number of the wharfside buildings with great accuracy. It also shows the location of the old seawall sections along Front Street and East Street and the plan for the new seawall. This latter feature makes it easy to see how the new waterfront related to the old one just before construction of the new seawall and the Embarcadero began.

Jackson Street to Howard: The seawall built in 1867-1870 along Front Street and East Street distinctly affects the probability of cultural remains from an earlier period remaining **in situ** along the portion of the C-3 alignment that follows the former East Street, from Jackson Street to Howard. When the Board of State Harbor Commissioners took over the city front in the fall of 1863, the wharves were generally in poor condition (some, such as Jackson Street, on the point of falling in), since wharf companies held city leases that were expiring and had no great incentive to invest further after their failure to gain long-term control of the waterfront. At the same time, it had become apparent that a seawall was needed to keep both present and planned fill from creeping eastward, sliding downhill as it were, over the unresisting bay mud.

The **Second Annual Report of the Board of State Harbor Commissioners** (1865) mentions the need for the seawall, the **Biennial Report** for the year ending November 3, 1867, presents the plan. Specifications called for excavating a trench 60 feet wide to 20 feet below low water and filling with rock. The stones on the outer face within the range of wave action were to weigh no less than 100 pounds; other stones could be smaller. (H. Com. 1867: Appendix) Specifications were changed slightly to suit the depth to firm foundation and the two unjoined segments planned for East Street were expanded to form a continuous wall from Jackson Street to Howard Street. The wall was completed in August, 1870--completed in the sense that the money for

P 4 ~ *State Harbor Commission Ms., 1877*

an additional authorized 5,000 feet was not available and before work was resumed it had become apparent that while the structure of the seawall was sound and it contained the fill admirably, the whole "Eddy Red Line" waterfront, with its angles where the street lines met, was causing a completely unacceptable rate of siltation and resulting expense in dredging. Map 3, with its 1867 and 1868 survey information, appears to show the waterfront along the C-3 alignment just before the building of the East Street seawall, although the same chart shows the Front Street seawall (contracted in 1867) in place but not yet wharfed over. Map 4 shows the progress of wharf-reconstruction by 1877. Together the maps suggest that between Jackson Street and Howard Street the excavation for the old seawall would in some areas have seriously disturbed or completely removed any cultural debris along the alignment, while in the remaining areas dredging at the time of building the new piers would have led to the same results. The reconstruction, realignment, enlargement, or extensive repair of the various wharves can be traced through the Harbor Commission **Reports**, and the conclusion to be reached is that all the wharves seen on the 1877 map had been completely reconstructed from their 1863 condition. The most prominent of the new structures on this part of the city front was the Ferry Building of 1875; its history is summarized in connection with our description of the Sanborn Maps of 1887.

A photographic view of the city and the waterfront from the lower slope of Telegraph Hill, looking toward Rincon Point, is seen in Plate 7, which is dated 1867. The Pacific Street wharf appears at the far left, the Jackson wharf just beyond it. The Marine Hospital on Rincon Point is at the right; the camera looks almost directly down Steuart Street in the distance, about two inches to the left of the Marine Hospital, where the masts of a tall sailing ship can be seen at the Steuart Street wharf. The impression is of a solidly built-up area, and while this is true of the foreground to the north of Market Street, it is deceptive for the area to the south. The 1869 chart shows recently-filled land by scattered dots, which can be seen in the south-of-Market area of the C-3 alignment as well as in the large area south of Rincon Point. The comparatively light building on the south-of-Market blocks before 1870 is confirmed by the

Eadweard Muybridge panorama taken from the Marine Hospital (Plate 8), which is described in some detail below.

Steuart Street: A sense of the city-building activity that resulted in the transformation of the front along the C-3 alignment is gained from the summary of "City Improvements" of the city directory published in October, 1868:

> It is now about ten years since the prices of real estate in San Francisco, after having reached a point of extreme depression, began to appreciate. With this advance in values, building and other enterprises looking to the expansion of the city, and which for several years had been suspended, were again resumed--improvements of every kind having for the past four or five years progressed at a rapid and constantly accelerated pace . . . there being perhaps no other city on the face of the globe whose progress would just at this time appear to be so much an inevitable necessity as that of San Francisco. . . . In its growth, San Francsico has spread during the past year in every practicable direction, the greatest expansion being necessarily toward the south and west. Many valuable improvements have, however, been made, meantime, along the city front, both on the north and east."

In Plate 8 it can be seen just how recent improvements south of Market and along Steuart Street were. The view was taken from a porch of the Marine Hospital. The street corner in the foreground is Spear and Folsom. At the left are the buildings (and what appears to be a water tank) of the new Risdon Iron Works, erected in 1867 on the block bounded by Folsom, Howard, Beale, and Main streets. The California Planing Mill (its sign painted on the roof) is seen at the center, at Spear and Howard. The lots in the foreground, underneath the low bluff of the Marine Hospital, appear to be very recent sand fill. The Black Diamond Coal Yard, in the right foreground, between Spear Street and Steuart, is **planked**, a most curious arrangement for a coal lot (as is the arrangement of fence supports) unless the yard were built on pilings. This is no doubt the case, and at the far right, next to the coal yard, a sloop is moored in the slip that ran into the center of the block. On Steuart Street, near the corner of Folsom, is the large shed of the Carmen Island Salt Works, and beyond it, toward Howard (and onto Mission and Market Streets), the ubiquitous

Plate 8: The City Front from Rincon Point, ca. 1870 . . . This portion of a Muybridge panorama shows the old Yerba Buena Cove area just at the time when filling had given it all the appearance of regular city streets and blocks. Spear is the street at the right, heading toward Telegraph Hill. Folsom is the cross-street in the foreground. Steuart is the next street to the right of Spear. The floor of the coal yard at the right is most interesting: it is planked, suggesting the lot is not yet filled. To the right of the Black Diamond coal yard, a sloop is moored in a slip between Steuart and Spear Streets. Except for the Steuart Street block between Folsom and Howard, the C-3 alignment might be said to roughly follow the line of the ship's bowsprits on into the mists of Telegraph Hill. (S. F. College for Women)

Plate 7: Rincon Point from Telegraph Hill, 1867 . . . The Marine Hospital on the bluff at Rincon Point is at the far right. The camera looks down Steuart Street in the distance (1); Howard Street and the line of East Street are at about (2). The northern end of the C-3 alignment, at Jackson Street, is approximately at (3). The view was made from near the southwest corner of Vallejo and Battery Streets, and in the foreground can be seen warehouses, cheap hotels, a ship chandlery, a shipsmithy, and other waterfront businesses. At the far left you can see the Oakland Ferry dock at Pacific and Davis Streets. At the far right, on Broadway (the street marked by the low Howard Bonded Warehouse at center) is a curious major enterprise--the American, Russian, and Californian Ice Company's Ice Depot. At the left foreground, we see the rear of one of the pair of brick warehouses erected on Front Street by Daniel Gibbs during the gold rush. This is the only building in this scene that exists today. (S. F. Maritime Museum)

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The progress of street work in this area, as listed in the **Municipal Reports**, leads us to believe that Steuart Street was for the most part still on pilings, with tidewater underneath the street. The Spear Street block in the right foreground of Plate 8 (Harrison to Folsom) was recommended for grading in 1859--but the property owners objected. However, most of this block was on original dry land. At that same time, Steuart Street between Howard and Folsom was piled and capped (probably repiled). The property owners along Folsom in 1859-60 objected to grading of the street (which was then on piles) between Beale and Spear Streets, but it was reported that the block between Spear and Steuart **was** graded. (Mun. R., 1859-60) Yet in 1865 pilings were renewed at the crossing of Folsom and Steuart. In 1866 Mission from Spear to Steuart was graded, but pilings were driven at the crossing of Howard and Steuart. (Mun. R., 1865, 1866) In 1868 new pilings were driven for Steuart Street between Howard and Folsom. (Mun. R., 1868)

A table of streets accepted up to 1883 shows that Steuart Street between Market and Howard was conditionally accepted in October of that year and that this street was paved with basalt blocks, which clearly implies that the street had been filled either at this time or some time earlier. (Mun. R., 1883) Not until 1888 was the block between Howard and Folsom similarly accepted as a street paved by private contract. (Mun. R., 1888)

So from 1849 to 1854 the Steuart Street portion of the alignment between Howard and Folsom was occupied by anchored shipping and between 1854 and perhaps 1888 was a very heavily used and frequently repaired or rebuilt wharf beneath which it is likely to assume there might collect some sampling of cultural materials. The same is true of the Steuart Street block between Folsom and Harrison, which was extended as a wharf (it being already a slip for a hay wharf) after 1867. (H. Com., 1867) However, we must repeat the observation that the projected C-3 excavation will be a few feet too shallow to reach the reported level of bay mud that has been depressed by the fill.

Rincon Point: It will be observed on the 1869 chart (Map 3) that the C-3 alignment near the end of Steuart Street, and for half a block after it rejoins the Embarcadero, is right alongside the Rincon Point pier operations of the late 1860's, and that the alignment goes right through the wharves of 1877 (Map 4). This is the area of the Hathaway wharf and warehouse operations, beginning in 1856. The first Hathaway Warehouse, seen on the 1856 chart (Map 2) directly below the Marine Hospital at Spear and Harrison Streets, is not the same structure suggested by the 1869 chart and clearly delineated on the 1877 map, for this second warehouse on the site fronts on Spear and Harrison precisely and is of different dimensions. (Of course it must be kept in mind that such buildings were sometimes incorporated into new construction, but it would seem clear in this case that a second building was erected on filled land, whereas the first had been built over the pier.)

We will pass over the confusing but interesting notes we have on the Hathaway family in San Francisco and try to make short work of the equally confusing references to warehouses "at Rincon Point," "opposite Rincon Point," "Rincon Dock," and the like--references to sites and dates that will no doubt become clearer as investigation of the history of the "Hathaway's Warehouse" still extant proceeds. At this point, such clues as redundancies in vague directory listings are the most obvious guides. One such occurs in 1864, when a Rincon Point Dock appears to be distinguished from Ham & Hathaway's Wharf and their associated warehouses. So perhaps by this date, and certainly by 1867-68 (survey for Map 3), another Hathaway's site appears on the block north of Spear Street from the original Rincon Warehouse. (There is probably also a third, directly off the northeast tip of Rincon Point, on Spear, between Folsom and Harrison.)

The scene in the vicinity of Hathaway's docks and warehouses in the mid-1860's is shown in Plate 9 just before the date of the Pacific Mail Dock, the Beale Street wharf, and associated filling of the cove at South Beach. The Hathaway's Warehouse near the northeast corner of Spear and Harrison, diagonally across from the Marine Hospital, is the one that figured in the most dramatic waterfront disaster of the period,

Plate 9: Hathaway's from Steamboat Point, 1867 . . . The Marine Hospital marks Rincon Point, where the wharves and warehouses have pushed outward from the original Hathaway's of 1856. A line of fill appears to be pushing out Beale Street, but there is no sign of construction for the Pacific Mail Docks at this time.

Plate 10: Rincon Point from the Beale Street Wharf, ca. 1870 . . . Looking north from a spot that would have been far out in the water off South Beach a few years earlier, Muybridge took this view from a point almost directly atop the C-3 alignment, looking up the line of today's Embarcadero.

Plate 11: Hathaway's Warehouse to the Pacific Mail Dock, from Rincon Point, ca. 1872 . . . The Hathaway's south of Spear Street (perhaps still extant in part), shows as the roof at the left. To the right are the Main, Beale, and Pacific Mail wharves. (All three, Bancroft Library)

when on April 7, 1875, Mr. Clark, a foreman for Risdon in the job of blasting and removing Rincon Rock (immediately offshore from Hathaway's original warehouse) took it into his head to have a smoke while preparing the "Giant Powder" charges in a shack next to Hathaway's Bonded Warehouse. The resulting explosion sent bricks from the walls of the warehouse raining all over Rincon Point. Though it was described in the next day's press as "One of the most appalling catastrophes ever known in this city," surprisingly few people were killed, given the busy afternoon scene the explosion intruded upon. The warehouse burned to the ground, as the result of the inability of the fire department to get water from the hydrants, but it was rebuilt, and appears on the 1887 Sanborn Map in the same location and configuration.

A Muybridge panorama taken from the east side of the Marine Hospital hill in 1871 or shortly after shows the roof of the Hathaway's Warehouse on the southeast corner of Harrison and Spear (the one that was not destroyed in the explosion) in the left foreground, together with the general scene in the neighborhood (see Plate 11). The wharves in this area took on the configuration seen in Map 3 in 1865 and '66. Main Street wharf, in the center of the photo (on the port side of the full-rigged ship), was extended in 1865, while the extension of Harrison Street wharf (out of sight to the left) and Beale Street wharf (the long pier to the right of the center) took place in 1866, as did the beginning of work on the Pacific Mail Dock (at the far right background). (Mun. R. 1865: 218; 1866: 244-245)

Steuart Street to King Street: The other photographs fill out a physical description of the alignment area between Hathaway's and the Pacific Mail Basin around 1870. Plate 10 was taken by Muybridge from the Beale Street wharf looking north. The photographer is standing at a point almost exactly on the alignment, which runs right alongside the location of the ship at the right. In the center of this view, a ship at the Main Street wharf is getting a new boiler from the Risdon Iron Works, which used this dock for outfitting. Plate 12, also by Muybridge, is looking down First Street from Rincon Hill. The short lumber wharves between

First and Beale Streets, seen on Map 4, are to the left, the Pacific Mail Dock to the right. The picture was made before the Mail Dock was lengthened in 1871. The C-3 alignment would pass through the outer end of the Mail Dock as it appears in this photograph.

Finally, Plate 13, a C. E. Watkins view of about 1871 or '72, shows the area between First and Second Streets. The C-3 alignment transects the middle of the lengthened Pacific Mail Dock, passes immediately beyond the ship moored alongside the coal dock behind the Oriental Warehouse, and terminates in the basin at a point that from this angle would be between the Oriental and the dolphins of the Central Pacific car ferry slip (right over the word "Warehouse").

As mentioned above, construction of the Pacific Mail Dock began in 1866, and the facility went into service in 1867. The Pacific Mail Steamship Company was chartered in 1848 to run from the Isthmus of Panama (where it would connect with steamers to New York) to Oregon. This government-subsidized venture to provide some regular and reliable service to the remote Pacific Coast turned into a fantastically lucrative operation when the first steamer sent out to the Pacific, the **California,** arrived at San Francisco on her maiden voyage jam-packed with gold seekers picked up in Panama. The focus of operation of course turned immediately from Oregon to San Francisco. Although there was some spirited opposition to the Pacific Mail in the early 1850's, rival steamship lines were unable, over the years, to break the Pacific Mail's virtual monopoly on traffic with the eastern states. The success of the Pacific Mail was in part insured by the excellence of its ships and operation--and in part by the usual cutthroat techniques of 19th century monopoly maintenance.

At the time the new wharf at First and Brannan was opened, the Pacific Mail was still California's most vital link to the East Coast and "Steamer Day" (the 1st and 14th of the month) in San Francisco was when, by custom and by contract, business transactions were settled up. In 1867 the big wooden sidewheel steamers of the Pacific Mail began service to the Far East, and the name "Oriental Warehouse" reflects the preoccupation with the potential "riches of the East." When Plate 13 was taken, the

Plate 13: The Pacific Mail Dock, ca. 1871 . . . "That which has been the most useless portion of the city front has become the center of extensive business." C. E. Watkins made this view of First Street, on the left, looking directly to the entrance of the P.M.S.C. dock. The Oriental Warehouse (looking much as it stands today) wore its back advertisement on Brannan Street. (Bancroft Library)

Plate 12: The Pacific Mail Steamship Company Wharf from First Street . . . At the right is the Mail Dock, as seen by Muybridge, probably about 1869, before the main steamer pier was extended. To the left are the then-new lumber wharves, around the corner of Rincon Point, from the old Steuart Street wharves. At the time of this photo, the C-3 alignment would have transected the outer end of the Pacific Mail Dock and angled inshore to the left, near the sterns of the square-riggers. (Bancroft Library)

situation of the Pacific Mail had changed drastically, for the transcontinental railroad was complete, its last link being the car ferry slip here at the foot of Second Street. But operations to Panama and the west coast of Mexico and Central America continued, as did the trans-Pacific trade. The Mail Docks, with their coal bunkers and yards, drafty passenger and freight sheds, machine shops and storehouses were active down past the turn of the century, and the Pacific Mail Steamships continued to run out of new piers in the area after the construction of the new seawall in 1908. (For the best summary of the entire history of the Pacific Mail, with some attention to its rivals, see Kemble 1950: 5-25.)

Needless to say, a large amount of cultural material (however random in its deposit or assortment) must have been thrown or dropped into the bay along the alignment between Steuart Street and King Street between the late 1860's and the early years of this century, when the various sections of the new seawall were built and the final filling took place. But we must again refer to the 1975 Woodward-Clyde soil profile, which shows the bay mud to be as much as 20 feet below the invert culvert grade of the sewer. Only along a few feet of the alignment at approximately King Street and The Embarcadero does the projected excavation meet the mud line. Thus, recovery of **in situ** objects is likely to the degree that the profile may be in error as the result of anomalies at one point or another.

EMBARCADERO SOUTH . . . 1887 to 1919

In the 1880's San Francisco's waterfront, in the area transected by the C-3 alignment, was at the height of busy shipping activity. The booming grain trade had brought a period of prosperity that affected the entire state. The biggest sailing ships of all time waited for their turn to discharge cargo and ballast (often coal) to pick up the grain from California's delta and valleys. The boom of the lumber trade of the 70's was undiminished, as schooners from Puget Sound, Humboldt Bay, and Grays Harbor brought in the timber to build up not only San Francisco but those treeless plains to the east that the railroad was populating. Trade with the Orient was a profitable business that seemed headed to an unlimited increase. The importation of Chinese laborers had been halted by the Chinese Exclusion Act of 1883. Bay area ferry business showed a steady increase every year as the city population spread over to Oakland and the East Bay where "choice villa lots" could be had at low down payment to accomplish everybody's California dream.

The effect on the waterfront was to increase property values. The 1887 open lumber yards that filled the blocks from Howard to Market Street between Steuart and East Street were an expensive "leftover" use of land as it first developed in the very early 1860's. Within a decade all of this land would be filled with sailor's boarding houses and all of their waterfront accoutrements.

The cultural activity described in the section that follows took place when East Street was still a planked wharf (up past 1912) and Steuart

Street on the east side was still not filled. For a discussion on the filling and paving of this area, see the earlier sections of this report.

The area of the waterfront covered by the C-3 alignment was both late and long in development, by San Francisco standards. Section 7 of the modern seawall, at the north end of the C-3 alignment, was started in May of 1887 and completed in May of 1889. Sections 8b through 11 were under construction as late as May of 1915. The dates of the building of the seawall did not always follow consecutive geographic order. To clarify this, a useful chronology of seawall construction from Gerald Dow's recent thesis, "Bay Fill in San Francisco," has been reproduced in the appendix of this report. Fortunately, this twenty-eight-year period of continuous filling, building, and rebuilding that accomplished radical changes in the waterfront is covered by the Sanborn Insurance Maps available for research. A discussion of the background of these research tools is in the **C-1 and C-4 Channel Street Report.** In describing the cultural activity that occurred along the C-3 alignment, within 200 feet of construction, it was possible to reconstruct this period of change using the following Sanborn Maps: 1887, issued again in 1891 (Bancroft Library microfilm of the originals from the Library of Congress); 1899 updated to 1905, and 1899 updated to 1912 (the archives of the San Francisco Water Department), and 1915, updated to 1919 (Department of City Planning). This last set coincides with the final completion of the seawall and has land-use survey notes, dated 1919, that give a more precise description of the **small** businesses along the waterfront than have previously been obtainable.

Again we are fortunate that the San Francisco waterfront was a favorite subject for photographers, whose collections have found their way into the files of the San Francisco Maritime Museum, as well as the Bancroft Library and the California Historical Society. The active interview and research program of the Maritime Museum has remained undiminished over the past decade, and as a result it was possible to add the comments of Captain Fred Klebingat, Jack Shickell, and others to the otherwise lifeless Sanborn Maps issued during the precise period of their active lives on the waterfront.

To this mine of research data it was possible to supplement the more casual, but equally authoritative, recollections of Senator Jack Maloney, Dan Fairchild (as interviewed by Roxburgh), Bill Granfield, Albert P. Wheelan, and James Roxburgh, himself. These waterfront recollections cover a span of time from 1868 up through 1915, concentrating mostly before the 1906 earthquake and fire. All of these accounts were published in the **South of Market Journal** during a period from 1925 through 1933. James Roxburgh was the **Journal**'s historian, and his building-by-building, and block-by-block total recall matches both the Sanborn Maps of 1887 and the city directories of this same period. Oblique references indicate that he was variously employed in a South of Market foundry, tannery, planing mill, waterfront odd-jobs, and in his "retirement" as head repair mechanic for a South of Market school district.

Pacific Mail Steamship Company Basin: Japan Street to First Street (Sanborn Map Section J)

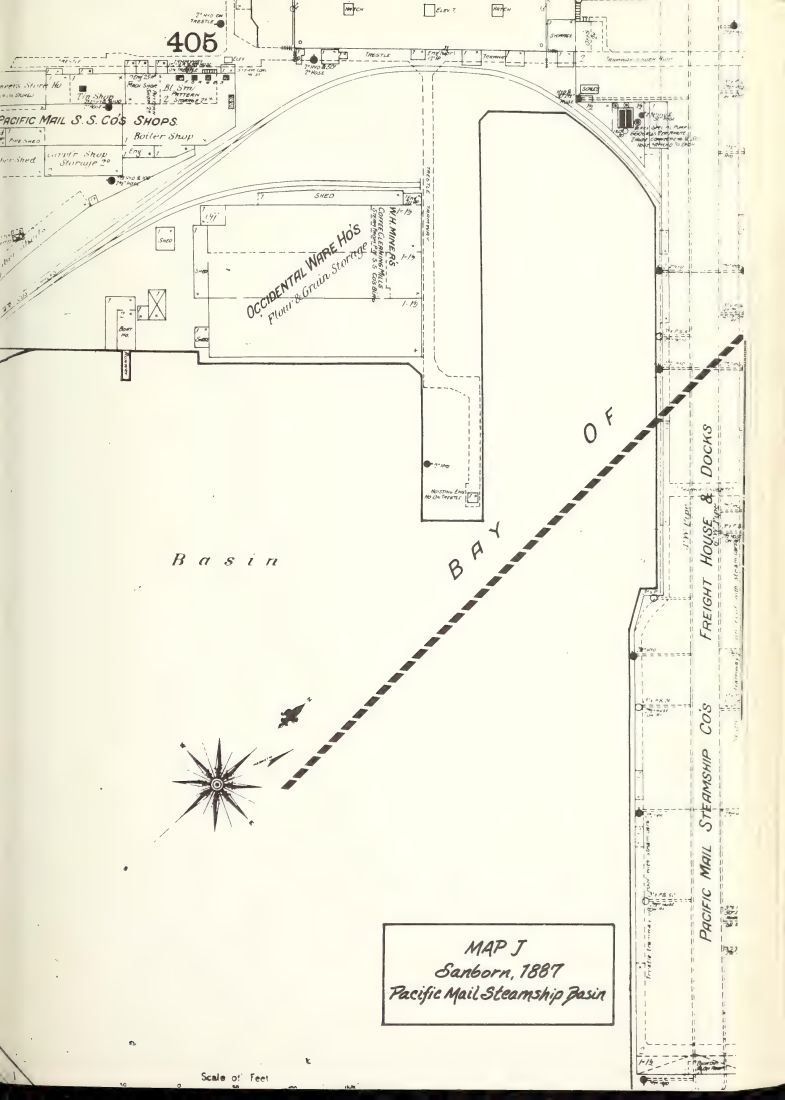
Map J of the 1887 Sanborn series shows the basin of the Pacific Mail Dock, which is transected by the C-3 alignment. The area of the map is bounded by Japan Street (now Colin P. Kelly, Jr. Street) at the left, Brannan Street at the top, and the Pacific Mail Dock (an extension of First Street) at the right.

One of the few changes between 1887 and 1891 was the removal of the **Nautilus Boathouse**. "South of Market" historian Roxburgh recalled, "There was a small beach with a small dock between First and Second Street [Sanborn Map 1 on the C-2 Report]. Here the steam schooners would coal or lay up. The Nautilus Boathouse was close by. The boys who were members of the club would go rowing from there. The first whale ever caught in the bay was hauled up on this beach and an admission charge of fifty cents was charged to see the whale. Business was fine until the whale got overripe." (Roxburgh 1933: 17) As Senator Maloney recalled, "The old 'Shrimp Schooners,' the **Jack** and the **Jim** that used to dock just across from the old Pacific Mail Steamship Company. How happy were the boys those days when they worked in the shrimp boats

and at nine o'clock in the morning brought the milk cans into the Cuckoo's Nest to be filled with old Hibernia brew, and how they used to put it over on us, during the noon hour, by placing some butter at the bottom of the can and during the rush have the cans filled with beer with no foam on it, getting about $2.50 worth of beer for twenty cents." (Maloney 1932: 10)

Sculls from the rowing club, shrimp schooners that brought in the tiny bay shrimp preferred by gourmets, the big railroad car ferry **Thoroughfare** that transported freight cars from Oakland, the tub **Mission Rock** that took the longshoremen back and forth to Mission Rock to work the grain ships from Europe—these are the remembered craft of the 1880's that criss-crossed the basin of the **Pacific Mail Dock** with a wide variety of maritime activities. All of these were in addition to the well-documented comings and goings of the trans-Pacific steamers at the Pacific Mail Dock itself—the **Coptic, Doric, Hong Kong Maru, Nippon Maru, City of Sydney, City of Para, Rio de Janeiro, Peking, China, Korea, Siberia, Mongolia,** and **Manchuria.**

About 150 feet northwest of the C-3 alignment was the **Occidental Warehouse,** sometimes listed as the Occidental Grain Warehouse, which is first listed in the city directories in 1879 but appears in the photograph of 1871 (see C-2 Report, Plate 12). The one-and-a-half-story frame warehouse was used for flour and grain storage during the height of California's great grain export trade to England and Europe. The Southern Pacific Railroad tracks ran out King Street, past Townsend and Japan, to between the Pacific Mail's steamship repair shops and the Occidental Warehouse, with a spur leading back of the warehouse and connecting to an overhead trestle and tramway that ran out to the small pier with its hoisting engine at the tip of the wharf. The end of this 140-foot pier lies within 25 feet of the C-3 alignment; the Occidental Warehouse would have been over 150 feet northwest. The city directories of the times list W. M. Starr as the proprietor of the Occidental Warehouse at this address. In 1887 the back portion of the warehouse was a coffee-cleaning mill run by W. H. Miner, who used the steam generated by the Pacific Mail Company's boilers in his operation. The Occidental Warehouse was removed


405
PACIFIC MAIL S. S. CO'S SHOPS
Boiler Shop
OCCIDENTAL WARE HOS
Plow & Grain Storage
Basin
BAY
OF
PACIFIC MAIL STEAMSHIP COS FREIGHT HOUSE & DOCKS
MAP J
Sanborn, 1887
Pacific Mail Steamship Basin
Scale of Feet

sometime between 1905 and 1912, when radical changes took place in the piers in this area. We find a different Occidental Warehouse on Berry Street between Third and Fourth by 1915.

The trestle and tramway that ran beside the Occidental Warehouse extended directly back to the **Oriental Warehouse**, an imposing brick building built in 1867 and still used as a warehouse today. The chronicler of the 1867-68 Langley's **Directory** noted, "They [Pacific Mail Steamship Company] have erected a two-story brick warehouse 195 feet deep by 230 feet wide, cut down hills, and filled up swamps to such an extent that what has been the most useless portion of the city front has become the center of extensive business." (Langley 1867-68: 14) The Oriental U. S. Bonded Warehouse can be seen in Plate 13 from the Brannan Street side with the painted sign on the back brick wall that can be seen today. The raised trestle from the Pacific Mail Company coal yard can be seen to the right, and the "P. M. S. S. Co. China via Japan" is painted over the entrace to the wooden shed that was built from Brannan Street out over the wharf into the bay. It took three such sheds to cover the wharf. Masts of a large sailing ship can be seen directly in front of the Oriental Warehouse in the slip known as the "Oriental Dock" by the mid-1870's. The Oriental's original proprietors were Benjamin C. Howard and I. Lawrence Pool. Howard was listed in the city directory of 1856 as the Superintendent of the North Point (Seawall) Warehouse. Pool first appears as listed in 1852, associated with a commission merchant firm. The city directory for 1859-60 lists the firm of Howard and Pool as operating from the North Point Dock Warehouse. By 1870, this firm operated the Oriental U. S. Bonded Warehouse, the P. M. S. S. Company's Grain Warehouse, and the North Point Warehouse as well as being agents for the Coos Bay Mining company. By 1871 Edwin Harris became Pool's new partner in operating these warehouses. Subsequent proprietors were George Bode by 1880, Percy E. Haslett in 1890, and R. P. Schwerin in 1904.

Samuel Haslett, of the leading family of warehousemen, gives us an idea of what was stored in the Oriental at the time of the Pacific Mail Steamship Company's operation, "This warehouse was located adjacent to the Pacific Mail docks at which all of the steamers trading to the

Orient and to Central America discharged their cargoes and was in a very favorable location in regard to the storage of rice, Chinese merchandise, Calcutta grain bags and other Oriental products, also Central American coffee." (Haslett speech, February, 1941)

A more detailed list of what very well may have been stored in the Oriental can be gained by studying the **Langley's City Directory** for 1879-80 for the China trade: "The commerce between China and Japan and San Francisco during the past year shows: from China, among other imports, 770,417 lbs. of coffee, of the value of $134,295; 36,977,215 lbs. of rice, of the value of $1,088,108; 3,249,082 lbs. of tea, of the value of $1,145,524; 968,108 lbs. of raw silk, of the value of $3,838,238; and silk cocoons, to the value of $84,399. From Japan there was received: 313,791 lbs. of raw silk, to the value of $578,869; silk worm eggs, cocoons and silk waste, to the value of $741,340, and 13,867,586 lbs. of tea, to the value of $3,404,630; the total imports from both countries for the year amounting to $14,685,781." (Langley's 1879-80: 23)

The same chronicler describing the Pacific Mail's business during this period noted, "For the transaction of the immense business included in these routes, the company now owns and has in service twenty-two iron screw propellers, seventeen side-wheel steamships, besides superannuated vessels, tug boats, etc. Many of these vessels are of the best class of naval construction, and possess the most luxurious appointments." (Ibid.: 23) These were the ships that delivered the goods directly to the dock of the Oriental Warehouse and alongside the Pacific Mail Steamship Company's big and little wharves.

The present structure of the Oriental Warehouse is identical to the original described in the 1867-68 chronicle. Two fire walls divide the interior into three structures with six skylights in each. A freight elevator was added in the center of the building sometime after 1919, when it was owned by the DePue Company but still known as the Oriental Warehouse—the large sign painted on the back brick wall having been retained through the various successive owners. Today, Southern Pacific interests own the Oriental Warehouse and use it primarily for storage of records. The railroad tracks that can be seen on the 1919 Sanborn Maps are still intact,

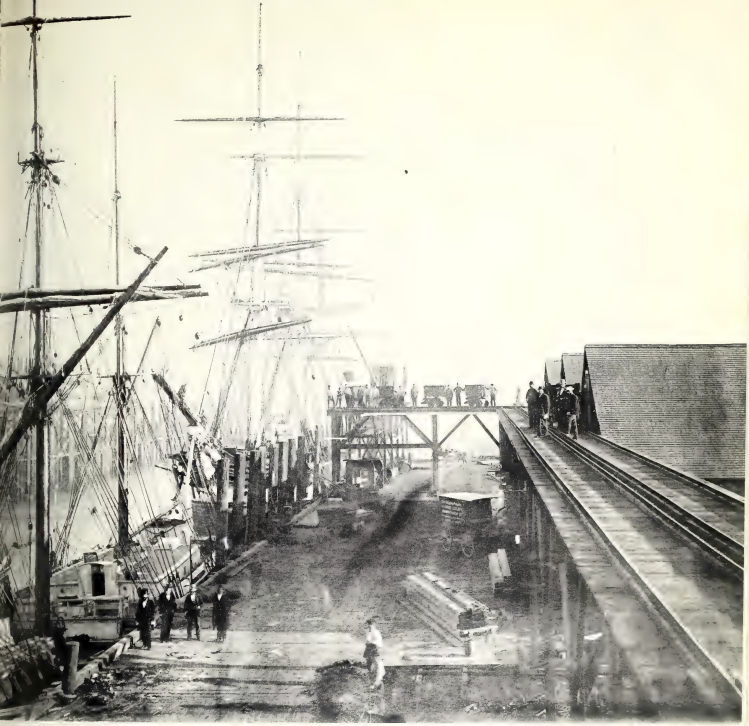


Plate 14: Coal Trestle of the Pacific Mail Dock, ca. 1871 . . . This picture, one of the series that the famous San Francisco photographer Carlton E. Watkins made of the terminus of the great Pacific Mail Steamship Company at the foot of First Street, can be dated by the fact that the main steamer wharf in the left background is being extended. Through the drafty sheds of the Pacific Mail Dock poured not only "the riches of the Orient," but tens of thousands of the Chinese laborers who aroused the dismay and wrath of California workers who were accustomed to reasonable working conditions and good pay.

The subsidiary wharf in the foreground was the coal dock, where sailing ships landed the coal to fuel the Panama and trans-Pacific steamers. The master and hardcase mates of a Yankee bark are standing by their vessel in the foreground. The coal heavers are assembled on the trestle with their carts and hoist, with what appear to be the superintendent and clerks of the operation nearest the camera. The C-3 alignment passes just beyond the end of this pier and transects the passenger wharf at the left. (San Francisco Maritime Museum)

although unused. The Oriental is one of the few remaining warehouses from this early period in San Francisco's waterfront history. It is especially interesting to the historian because it has been changed very little. It would appear that the Oriental Warehouse would be a candidate for landmark status with the City and County of San Francisco. The building is about 250 feet from the C-3 alignment and will not be impacted by the sewer construction.

The building of the **Pacific Mail Steamship Company's Wharf** in 1867 at the foot of First Street has already been discussed in the "City Building" portion of this report. By 1887, the dock had been extended to a distance of 1,125 feet, with the coal-cart tramway operating along the roof, as can be seen in Plate 14. The sheds that protected both incoming passengers and freight had truss roofs covered with tarred canvas over shingles. Some idea of the nature of both the goods and people that passed over this wharf from 1867 through 1905 can be gained from this excellent reminiscence in Harry P. Umbsen's interview of Albert Wheelan, one of the "old timers" whose memories enlivened the **South of Market Journal:**

"There was the Pacific Mail Dock. Company steamers from China landed here regularly, laden with teas, silks, rice, and many other Oriental products. In addition to its important service in the upbuilding of California was the importation of many thousands of Chinese coolies--the advance guard of whom were contracted to build the Central Pacific Railroad at one dollar per day without board. The continual swarming of Chinese coolies over California in a time became a dire menace to white labor. Denis Kearney, the sand lot orator, with his slogan 'The Chinese must go,' finally won Congress over to the Chinese Exclusion Act of 1882-1884. This dock on steamer days was the scene of feverish activity. An immense wooden shed extending over the water on teredo-covered piles was generally loaded with all kinds of freight, mainly raw brown sugar from the Sandwich Islands. It was this same sugar that laid the fortune of a young German emigrant, Claus Spreckels.

"The bananas and sugar were irresistible magnets, which we boys with keen instinct were attracted to. There did not seem to be anything quite so satisfying to a boy's palate as this unclarified, tangy sweetness.

Here a feast to the full was enjoyed and a stomach ache that same night. The debarkation of hundreds of Chinese coolies from the steamer to the dock was the commencement of indescribable confusion, each coolie intent on extracting his belongings from the tangled mass strewn promiscuously in heaps. To this were added the shrill cries and jabbering of an alien race.

"With great difficulty the Compradore, or head man, finally straightened out the confusion and helped to place the Chinese, with their bed matting and effects, on large wagons and delivered them to their countrymen in Chinatown.

"These wagons were a peculiar product of San Francisco, built specifically for Chinese hauling. The body was low slung and very long and wide, with a semi-abrupt sloping to the tail end, peculiarly adapted to the Oriental trade, and usually drawn by two horses.

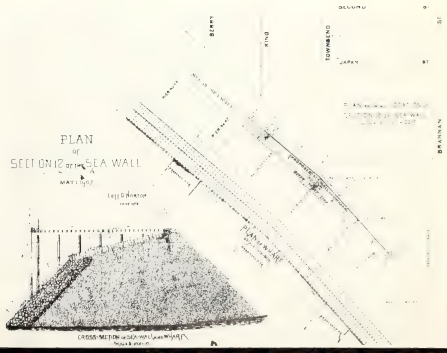
"As they wended their way northward through the Second Street [Cut in the early 1870's], a defile of restricted width spanned by a wooden bridge at Harrison Street, evidently wondering at the strange customs and manners of the people of a new land, they were invariably greeted by a fusillade of rocks from heights above, which gave them an insight from this, their first reception, to the future treatment they were to receive from the hoodlums who invested the different parts of the city." (Umbsen 1934: 14-15)

The Pacific Mail Dock served more than the ships of that company; indeed, "The majority of [passenger] ships entering the bay berthed at the Mail Dock at First and Brannan. All lines--the O and O, P M S S Co. and others--docked at this historic spot." In addition to the steamers listed earlier, "there were the ships on the Panama run, **The San Jose, San Blas, San Juan,** and the **Acapulco** plied along the Mexican coast. The **Acapulco** sank alongside the 'little' Mail Dock on sailing day. She took a list and the water poured into an open port." (Maloney 1938: 5)

The Pacific Mail Dock continued to operate well into the 20th century. By 1907 a proposal that was to become reality within a year was made that would drastically change the P.M.S.S. Dock. Plates 16 and 15 show how seawall section 12 cut at an angle right across the Pacific Mail Dock basin and pier. Three new piers were built in its

Plate 15: Building the New Seawall, 1908 . . . Sections of the new Embarcadero seawall went in over a period of more than a generation on the C-3 portion of the alignment. This section near the old Pacific Mail Dock is a fair example of constantly changing construction techniques. The view is from the foundation of the new Pier 42, with its concrete piles, where it starts to extend beyond the rock seawall. (S. F. Maritime Museum)

Plate 16: Engineer's Drawing of the Seawall, May 1, 1907 . . . This plan was carried out in the plate above, and clearly indicates just how the old Pacific Mail Dock was cut off and filled in. (Harbor Commission ms.)



place--Piers 40, 38, and 36.

Brannan Street: From First Street to Beale Street (Sanborn Map Section K)

The 1887 Sanborn Map K shows three short wharves that projected from Brannan Street between First and Beale. In addition, there is the larger Beale Street Wharf which is transected by the C-3 alignment. The three short (about 165 feet) wharves were used for bay scows and lumber schooners unloading timber from Coos Bay and the Columbia River for the **A. M. Simpson Lumber** yards across Brannan Street.

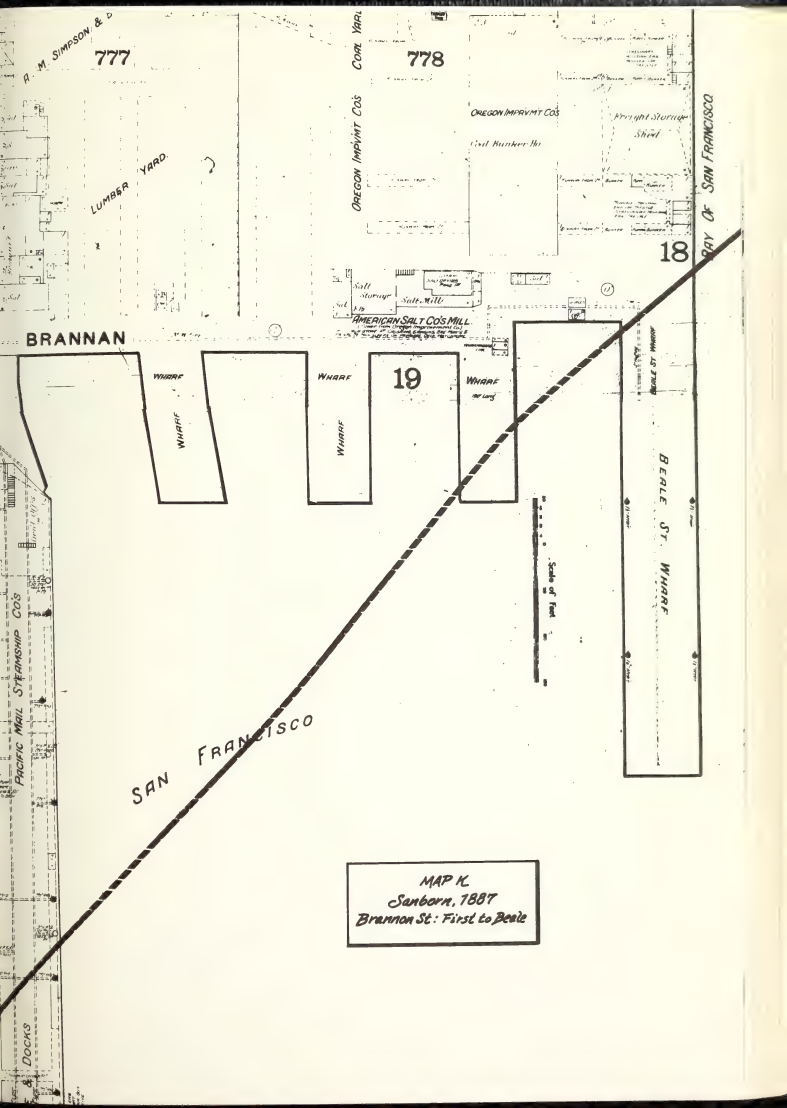
Roxburgh recalled: "The bay used to come up under the houses and extended to Main and Beale Streets. On moonlight nights gay Lotharios would row with their sweethearts as far as Main and Beale. In those days it was a favorite pastime to fish for a sack full of crabs from the bay, and when they were caught they would be cooked in a wash boiler and in the evening after business was over, all of the families would have a feast of crab out on the sidewalk, and the young people would dance to the music of the accordion and harmonica." Later he added, "From Beale to Fremont to First were small docks where small vessels could load lumber." (Roxburgh 1930: 9; 1933: 18)

As early as 1864, Asa M. and Robert Simpson were operating a lumber yard at Pier 11 on Steuart Street. By 1879 they had opened another yard, just opposite the wharves on Map K, that stretched from Brannan to Bryant and First to Fremont. By 1882, Hittell wrote "Simpson brothers are remarkable for the wide extent of their operations. They have 7 saw mills, one at Shoalwater Bay, one on the Columbia, 2 at Gardner, one on the Umpqua River, one at Coos Bay, one at Crescent City, and one at Boca. Their mills have a capacity to produce 270,000 feet daily. . . . Boca supplies sugar pine; Crescent City, redwood; Coos Bay, white cedar; and the others, red fir (Oregon Pine), and spruce, making a variety of the most valuable kinds of Pacific lumber now in the market. For the purpose of transportation they have a fleet of 15 vessels, including a bark of 518 tons, 6 barkentines, of 2,000 aggregate tons, a brig of 312 tons, 8

schooners of 1,681 aggregate tons, and 6 steam-tugs; they are now building a schooner of 300 tons, and a steamer, to add to their fleet. They employ 500 men, and pay from $30 to $100 a month wages. Their office is at 44 Market Street in San Francisco." (Hittell 1882: 594-5) The smaller schooners and steam-tugs would have docked at these Fremont Street wharves and the larger barks and barkentines would have discharged their cargoes around on Stueart Street. Both operations were still in effect as late as 1896, but by 1905 the Sanborn maps show the drastic change in these wharves and the block occupied by Simpson Brothers was then shown as vacant.

From 1899 to 1905 a new wharf (called "The Little Mail Dock") was operated by the Pacific Mail as Pier #38, east of First Street. It was 60 feet wide and extended 600 feet from Brannan Street. Its location is transected diagonally by the C-3 alignment. The next wharf to be rebuilt (called the Fremont Wharf) became Pier 34; it was commenced in 1889 and appears on Map 5. Pier 34 jutted out to the east of Pier 38, and the angular eastern extension was covered by a wooden shed. It is important because it too is transected diagonally by the C-3 alignment and it was the pier used by the famous Alaska Packers Association from 1896 through 1907. As can be seen in Plate 16, both of these wharves, together with the Pacific Mail Dock, were scheduled for replacement by the new seawall section 12. This section was started June 13, 1907, and completed June 8, 1908. (Dow 1973: 240)

Maloney remembers the Alaska Packers' sailing fleet from this period, "The picturesque sailing ships, in the fishing business, set forth for Alaska from Fremont Street, and believe me, they carried a tough and hard crew. On one voyage of the **Star of Italy** there were fifty stowaways aboard. It was a never to be forgotten sight to see a sailing ship drying her canvas in the breeze." (Maloney 1938: 5) The Alaska Packers' Association was the giant monopoly that grew out of the frantic boom and cutthroat competition in the Alaska salmon fishery of the 1880's. The APA was formed in 1893 and down through the 1920's operated one of the world's greatest fleets of sailing ships—in the end, the last of the great sailing fleets. The economics of the business were the reason for



MAP K.
Sanborn, 1887
Brannon St: First to Beale

this colorful anachronism: each spring it was necessary to transport all of the fishermen (Italians, North Germans, Scandinavians, and a smattering of every nationality of deepwatermen), all of the cannery workers (Chinese for the most part), and all of the supplies for the fishing and canning season north to southeastern, central, and western Alaska. The transport ships would be laid up at anchor for the summer and would return from Bristol Bay and the other northern anchorages in September with the men and the season's pack. Old sailing ships in good condition were plentiful and comparatively cheap; the sailors were also the fishermen, so there was small operating cost; the roundtrip to Alaska for this high-priced cargo was just as a freighting proposition about as lucrative as the year-long round-the-world voyages in the bulk trades that kept merchant sail alive. Thus, the famous "Star" fleet of the APA became a fixture of the Oakland Estuary in the winter season, while in the spring and fall these ex-"Cape Horners" would be seen loading or unloading at the San Francisco wharves. The San Francisco Maritime Museum's exhibition ship, the **Balclutha,** is typical of the type of vessel favored by the Packers, and she sailed under their flag as the **Star of Alaska.** The pier at Fremont Street was used by the APA until construction of the seawall section in this area began in the latter half of 1908. In the last years of the 19th and early decades of the 20th century, the Alaska salmon industry was the most valuable fishery in the world, and even as the European demand for California wheat declined the foreign taste for San Francisco salmon rose. (Olmsted, 1960: **passim**)

The Beale Street Wharf was operated by the **Oregon Improvement Company** as a coal wharf. In 1887 it measured 600 feet into the bay from Brannan Street and ships could dock all the way back to Bryant Street on the north side, adding another 500 feet of available wharfside space. There were hoisting engines on the top of trestles to facilitate the unloading of coal from the Oregon Improvement Company's ships right into coal bunkers. The main coal bunker house was 34 feet tall, 260 feet long, and 90 feet wide, with five raised trestles that could move coal right into an open coal yard, or carry coal across Fremont Street into another coal storage yard. Freight storage sheds, offices, and warehouses

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covered the entire block from Brannan to Bryant and from Fremont to Beale at the water's edge.

Henry Villard and his associates of the Oregon Improvement Company owned the best mines in the Pacific Northwest. In Hittell's opinion, Villard was one of three wealthy capitalists who competed with each other for the sole right to supply San Francisco's coal. Cheap supplies of coal imported as ballast for the grain ships from Europe and Great Britain were the real competition that kept the would-be monopolists in line. (Hittell 1882: 307) The coal department of the Oregon Improvement Company produced "Seattle coal—lignite lying in 7 parallel veins, of varying thickness, on a tract of 1,200 acres near New Castle, 20 miles east of Seattle." The mines had been worked since the early 70's, producing about 100,000 tons a year. In the early 80's the company added a fleet of steamships, including the **Willamette**, 2,500 tons; **Mississippi**, 1,300 tons; **Umatilla**, 2,200 tons; and the **Walla Walla**, 2,200 tons. "These steamers were designed and expressly built for the economical transportation of coal from Puget Sound. . . . Their facilities [in San Francisco] for unloading and storing coal are probably the most complete and extensive on the coast. The machinery and apparatus is capable of lifting 200 tons an hour from the 4 hatches of a steamer, and the storage sheds can accommodate 10,000 tons of coal." (Ibid. 308-9)

Bill Granfield, a coal dealer who enjoyed the self-styled reputation as "The only full-weight coal dealer south of Market" from 1870 to 1906 describes how the Oregon coal got from the docks and bunkers to San Francisco's fireplaces: "I had the duty as the oldest of the family to start out at 5:30 a.m. and drive the one-horse dumpcart down around to the old Oregon Improvement Coal Company at the Beale Street Wharf. There I would drive under a coal chute and then on to the scales. While the weighing was in process, I would select an ample supply of lump coal to throw at the gangs I usually met on the way back.

"The first gang encountered was the Mail Dock gang composed of the Cribbens and the Maloneys. Tom Maloney threw rocks at me and I returned his fire with a barrage of coal. Trailing behind Tom were Pete and Jack Maloney with the Cribben boys who had their sacks full of coal

Plate 18: (below) **Chrestoffersen, the Shipsmith, ca. 1883 . . .** Waterfront mechanics, with the waterfront cop, gather for a view in front of a shop known for many years on Bryant between Main and Spear. Anthony Chrestoffersen was one of many shipsmiths in San Francisco who put out in a Whitehall Boat to greet incoming ships. (S. F. Maritime Museum)

Plate 19: (right) **Chrestoffersen & Tway, ca. 1899 . . .** Ephraim Tway became a partner in 1897. A tip of the shipsmithy appears at the left on the intersection of streets built on piles. (Bancroft Library)

Plate 17: The Majestic Hove Down, 1886 . . . Haveside, the rigger, would heav the big ships down so the shipwrights could strip off the old copper and caulk th seams before applying the new copper sheathing. The C-3 alignment cuts acros the water to the far left. The scene is the Beale Street Wharf. (Bancroft Library

by the time I reached the top of the hill at Second Street. Next gang with Joe McCann as pitcher and the rest of his family with sacks. . . . When I reached the coal yard it was safe to say that a goodly portion of my load was in the homes of those members. Harry Harms, a coal dealer, was heard to say that the Maloneys, McCanns, Morenas, and the Gallaghers had never spent a cent on coal or wood.

"It was later that my father confided in me that he thought they were giving me short weight at the dock--a short ton for a long ton. . . . [I was advised] 'Go down to the storage yard of the Board of Public Works and pick up a half ton of basalt blocks. Then bring them to my yard and I will paint them black so you can substitute them for a few lumps of coal in each sack. If the customer complains tell him it is an everlasting coal. If he still objects return the blocks to the wholesaler and he will replace them with coal. This works both ways.'

"In view of the fact that the wholesaler weighed the horse and cart on the first trip and deducted this same weight on the following trips for convenience John suggested another kind thought. 'Bill, this is what I do. I have two horses of the same color, one of which weighs 350 pounds more than the other. I use the heavier horse on the first trip and the lighter horse for the rest of the day. This nets me an additional profit on each load.' When I told him we did not have two similar horses, he suggested using carts of different weights or with removable pig lead in the jockey box." (Granfield 1938: 2)

Although coal was the main business at the Beale Street Wharf, Roxburgh recalls another activity that took place here. "At the end of the dock Haveside, the rigger, [whose firm is still in operation in 1977] would heave the vessels down on their sides so that they could be caulked. Some seams would open more than others and this way would make a better job." (Roxburgh 1933: 18) This ancient technique for doing bottom work on a ship is shown in Plate 17 where the American bark **Majestic** is hove down alongside the Beale Street Wharf in 1886. The work being done in this case is a complete new coppering job, which involved stripping off the old copper, caulking the seams, laying felt in tar over the bottom, and then nailing on a full copper sheathing to protect the wooden hull

from shipworms and to inhibit the growth of weed and barnacles. "Heaving down" was an economical way to repair a ship—in the hands of an expert who knew what he was doing. But by 1886 it was an unusual enough sight to draw the attention of numerous onlookers, including the president of the Northern California Amateur Photographers Club and the ubiquitous group of boys on the short wharf to the far left.

The **American Salt Company's** mill was about 150 feet from the C-3 alignment, on Brannan Street, directly behind the Fremont Street wharf of the 1880's. It was first listed in the city directories in 1885 with L. N. Webber as the manager. Power came from the Oregon Improvement Company coal wharf to run the grinding and crushing millstones, as well as steam for the drying pans of salt. It was a one- and two-story frame building measuring 125 feet along Brannan and 45 feet deep. Waterfront saloons graced either end of the building.

The **Beale Street Wharf** shows on the waterfront map of 1896 (Map 5) and was given the number Pier 32. The proposed new seawall section 12 in 1907 effectively blocked the 1887 Beale Street Wharf (Plate 16). The 1912 Sanborn Index map indicates that the entirely new alignment of piers in this area had been completed as proposed. The new concrete piers were numbered 38 (formerly the Little Pacific Mail Dock), 34 (formerly the Fremont Wharf), and 32 (the former Beale Street Wharf).

Pier 36 had the Western Pacific Railroad ferry slip at the end of the 625-foot pier built on cylindrical reinforced concrete piles. A double set of railroad tracks went out on top of the concrete wharf to the ferry slip. A 60-by-300-foot wooden shed to one side also opened on to the tracks with large iron rolling doors.

By 1919 Pier 32 formed a U-shaped structure with Pier 30. They were both built on concrete piles, and Belt Line Railroad spurs ran down either side from the Embarcadero and through the center of the U for receiving freight from the American-Hawaiian Steamship Company, whose offices were at the base of the U. The piers were each over 750 feet long and measured almost 200 feet across with a 200-foot slip in the center. Low wooden sheds covered both piers with roofs supported by rows of wooden posts.

MAP 5~ *Harbor Commission, 1896*

Bryant Street: From Main Street to Spear Street (Sanborn Map SectionL)

The 1887 Sanborn Map (L) of the area shows this part of the waterfront just a decade prior to the radical changes in its configuration. The **Main Street Wharf** at that time was 570 feet long and 75 feet wide. The C-3 alignment cuts diagonally across the wharf. Maloney remembered that, "The Main Street Wharf was a coal wharf where ships dumped the coal into hoppers." (Maloney 1938: 5)

The coal came from two sources: Mt. Diablo and Bellingham Bay. The Mt. Diablo coal supplied the **Black Diamond Coal Company**, whose yards were just opposite the pier on Bryant Street, between Main and Beale. The local coal was mined as early as 1860, and production was 204,000 tons of rather low-grade fuel by 1874. Pierre Cornwall was the agent for the Black Diamond Company in 1868, and by 1879 he was president. Their ad in the city directories for that year read, "Steam and house coal by the cargo and to ships and dealers." By 1882 San Francisco was importing 104,000 tons from Mt. Diablo, about the same as from British Columbia and Seattle during the same year. (Hittell 1882: 307) In addition to Mt. Diablo coal, the company added the Bellingham Coal Company to its interests, with mines on Puget Sound. The Independent Steamship Company, over which Mr. Cornwall also presided, carried the coal from Puget Sound to the Main Street Pier for distribution to dealers and private parties. This coal operation was not as large nor as elaborate as that on the Beale Street Wharf, with its raised trestles and tramways. Black Diamond coal believed in advertising, and their signs can be seen in early photographs all over San Francisco fences. One of their yards can be seen to the right in Plate 8, the panorama taken by Muybridge in about 1870.

The Main Street Wharf underwent a series of reconstructions. The Harbor Commission lengthened the pier by 230 feet in 1899 to enable ocean-going steamers to use the Santa Fe dock installed just to the northeast. "Now 800 feet in length . . . it is sufficient to enable the

largest vessel afloat to dock alongside the wharf. Ship and [rail] car now meet at this point." (H. Com. June 30, 1900: 9) By then the Main Street Wharf was labeled Pier 28. By 1912 Pier 28 was drastically shortened to accommodate the new seawall.

The **Merchant's Dry Docks** had been floated from their North Point location in 1879 to a new position between the Main Street Wharf and the Spear Street Wharf, where they remained until 1899, when the Harbor Commission rebuilt the wharves for the new Santa Fe Railroad ferry slip. Roxburgh recalls the operation at this Bryant Street location: "The Main Street Dock was used mostly for repairs to vessels. The Cousin's Floating Dry Dock [the Merchant's Dry Dock] was moved over here from North Point to Spear and Main. There was a small wharf between Spear and Main called Johnson's Wharf, where vessels would tie up and await their turn to go on the dry dock." (Roxburgh 1933: 18)

The floating dry dock remained in place at this Bryant Street location until the Harbor Commission awarded the contract to build the car ferry slip for the Santa Fe Railroad on September 19, 1899. The Santa Fe had purchased the block near the bay bounded by Spear and Main, Harrison and Bryant, and erected a freight depot. The Santa Fe towed railroad cars across the bay from Point Richmond and the new slip was built to accommodate this operation. (H. Com. June 30, 1900: 7) The 1905 Sanborn map of this area shows the Santa Fe tracks over all of Block 383, with a depot for handling freight on Spear Street. When section 10 of the seawall was built (August 29, 1909 to September 7, 1911), the Santa Fe slip that took the place of the Merchant's Dry Dock that was rebuilt as the new pier 30.

Across Bryant Street from the Main Street Wharf and the Merchant's Dry Dock was a row of typical informal waterfront establishments. There was a corner saloon with porch that extended from Main Street past the saloon and restaurant. Next door was the shipsmith shop of **Chrestoffersen and Tway** (20 Bryant Street), and beyond that a restaurant and shop and still another saloon and restaurant on the corner of Spear and Bryant. Fortunately when Chrestoffersen and Tway posed for the visiting photographer, they did so with all the gang, tools in hand, as is seen in

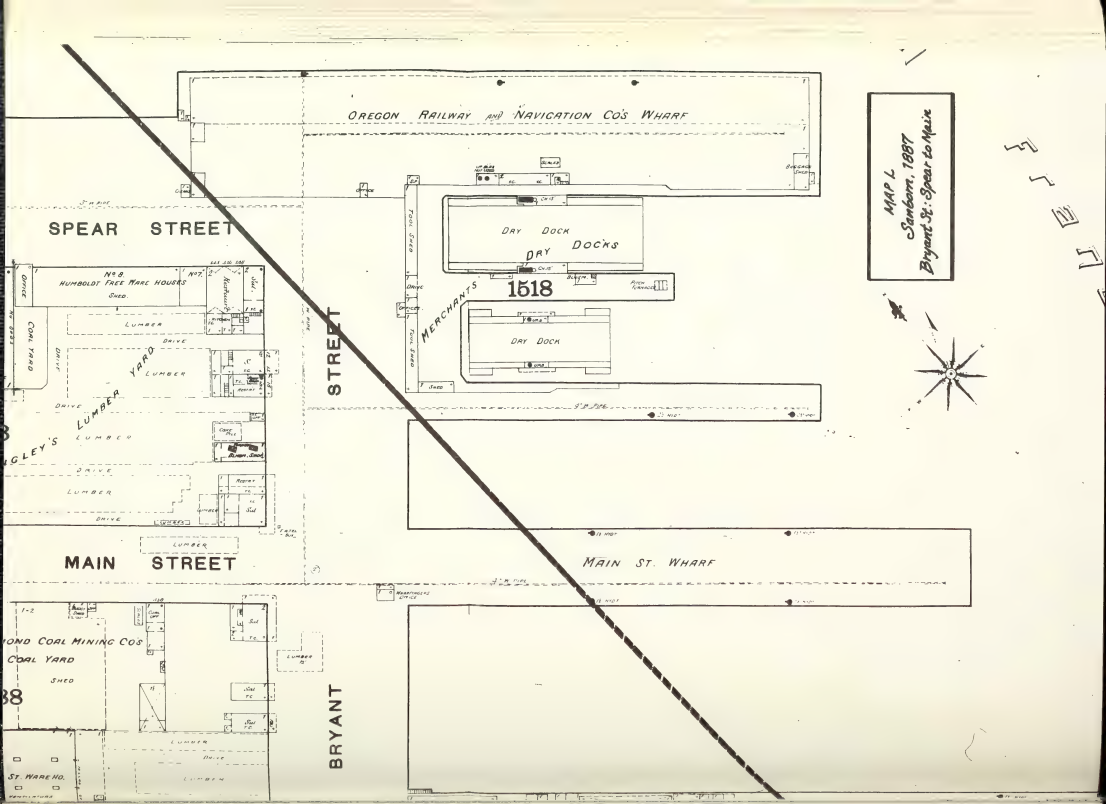
OREGON RAILWAY AND NAVIGATION CO'S WHARF
SPEAR STREET
MAIN STREET
BRYANT STREET
MAIN ST. WHARF
DRY DOCK
DRY DOCKS
1518
MERCHANTS
DRY DOCK
No 8
HUMBOLDT FREE MARK HOUSES
SHED
LUMBER
DRIVE
COAL SHED
OFFICE
STABLE
SCALES
COAL
LUMBER YARD
EAGLEY'S LUMBER
COAL MINING CO'S
COAL YARD
SHED
ST WARE NO.
MAP L
Sanborn, 1887
Bryant St: Spear to Main

Plate 18. They remained in business here, near the floating dry dock, until 1901, when they moved around the corner to 420 Beale Street. A later picture, dated March 25, 1899, catches the edge of their smithy and gives us a clear idea of Bryant Street at that time. Plate 19 shows that the restaurant next door was still on pilings and Bryant Street was still a wharf. The masts of the ships beyond would belong to vessels alongside the **Oregon Railway and Navigation Company Wharf.** The C-3 alignment cuts across Bryant Street at the edge of the Merchant's Dry Dock, passes by the corner saloon, and crosses the head of the Spear Street Wharf.

The **Spear Street Wharf** was extended to its 690 foot length in 1879, (at the same time the Merchant's Dry Dock was brought from North Point) in order to accommodate the Oregon Railway and Navigation Company passengers and freight. (H. Com. 1879) In 1882 the company had "Ten passenger and five freight steamers, plying from San Francisco to Puget Sound and San Diego, and intermediate ports. The **State of California,** running to Portland; the **Victoria,** to New Westminister; and the **Constantine,** to Mendocino; these were iron propellers. The wooden propeller **Idaho** ran to British Columbia; the wooden propellers **Los Angeles** and **Alexander Duncan,** and the wooden side-wheelers, **Dakota, Orizaba, Ancon,** and **Senator** were in the passenger traffic on the southern coast of California. The steamers left San Francisco for San Diego and intermediate ports, at intervals of five days; and for Portland, at intervals of 4 days." (Hittell 1882: 201)

As late as 1900, gold seekers bound for Alaska left from Spear Street and the wharf looked very much the same as late as 1909 (see Plate 21). Seawall Section 9 was started in March of 1910 and completed in October, changing the face of the waterfront in this area. (Dow 1973: 240) Pier 28 was in the general location of the Spear Street Wharf, but built at a different angle. The new pier was 676 feet long and 127 feet wide—built on wooden pilings with an asphalt floor, covered with the usual truss roof shed. Tracks of the State Belt Railroad were laid on both sides of Pier 28.

Plate 20, a three part panorama taken on the corner of Main and Bryant looking east towards Pier 34, gives us an idea of what the waterfront

looked like once the seawall was in place. The basalt-paved street in the two plates to the right is Bryant Street and the saloon, featuring Hibernia Steam and Porter, is at the corner of Main and Bryant. The tracks to the left curve out from in front of the Santa Fe Depot (a two-story brick building in back of the photographer by a block, and to his left). What is interesting to us is that at this rather late date, about 1915, water appears alongside and underneath the old abandoned piers—the Main Street and Beale Street Wharves—indicating that filling in back of the seawall was casual and continuous. Notice that the railroad ties in the plate, to the left, are mounted on pilings and the roadbed is full of planks to finish the job. The ubiquitous piledriver of San Francisco's waterfront, from its earliest days to this more modern time, looms over the Santa Fe freight car.

Spear Street to Harrison: Hathaway's Wharf & the Steuart Street Wharf (Sanborn Map Section M)

The 1887 Sanborn Map (M) shows us the C-3 alignment as it cuts from Spear Street north to Hathaway's Wharf to Harrison, past the Steuart Street Wharf, and turns up Steuart Street itself. The early development of Hathaway's wharf and warehouse holdings has been discussed in a previous section. In September and October of 1874, Edmund Valentine Hathaway and Charles W. Hathaway built the Spear Street Wharf. At the same time Stueart Street was connected by the wharf to Harrison, and by January of 1875 the Harrison Street Wharf was constructed to Spear. (H. Com. 1875: 9) The addition of 180 feet to the Steuart Street Wharf, south of Harrison, in 1882, brought this pier to a length of 557 feet—as we see on this 1887 Sanborn Map. (H. Com. 1882: 7)

The "Giant Powder" explosion in April of 1875 that demolished Hathaway's brick warehouse (shown here rebuilt at the southwest corner of Harrison and Spear as U. S. Bonded Warehouse No. 5 and 6) does not appear to have impeded the flow of commerce in and about Hathaway's Wharf. **Hathaway's Warehouse No. 7 and 8** was a 200-foot frame shed that ran along the Spear Street bulkhead that he had previously constructed

FOLSOM STREET

J Mc DONOUGH COAL YARD

HOBBS WALL & CO BOX FACTY

382

SAILORS' HOME

SPEAR

PACIFIC PINE LUMBER CO

S H HARMON LUMBER CO

378

MAP M
Sanborn, 1887
Spear to Harrison
Hathaways Wharf

HARRISON

STREET

HUMBOLDT FREE WARE HOS

383

SPEAR

1517

HATHAWAYS WHARF

STEWART ST WHARF

to connect with the large brick **Humboldt Free Warehouse** ("Formerly Hathaway's") that stood on the southeast corner of Harrison and Spear. In 1887 the warehouse on this side measured 130 feet across and 260 feet long. A brick warehouse of the same dimensions also appears on the 1877 harbor engineer's manuscript map at a time the city directories listed Edmund V. Hathaway as "proprietor of Hathaway's Warehouse and Rincon Point Warehouse, at the foot of Spear." By 1879 the Humboldt Free Warehouse was owned by J. W. Cox and Company, and in 1887 Haselett and Bailey listed this warehouse among their holdings. At some point after 1891 and before 1900 the structure of this building was considerably altered. A second story was added, as appears in Plate 21, as well as additional walls with several sets of windows, extending the building south towards Bryant Street. The 1905 Sanborn Maps show the new measurements of the warehouse on this site to be 400 feet by 130. By this time the entire block was owned by the Santa Fe Railroad, with tracks that went up to the warehouse, ran alongside the western receiving area, and led directly to the Santa Fe Ferry slip on the site of the old Merchant's Dry Dock. The 1915 Sanborn Map of this block shows a considerable cutback in the building's length. The two-story structure now measured 300 feet along Spear Street. Whether the 1906 earthquake, the ravages of time, or the changes in the needs of the Santa Fe and subsequent owners account for the cutting back of the structure is a matter of conjecture. It is of interest to us, as the present brick warehouse at the southwest corner of Harrison and Spear is the cutback version of the warehouse that appears in the 1900 plate (21). Whether the one-story brick warehouse of Hathaway's that dates back certainly to 1877, and probably to the late 1860's, is incorporated into the present building is not known at the time of this report. The C-3 alignment passes the building at a distance of 200 feet and will in no way impact this historic structure, perhaps a future candidate for landmark status in the South of Market waterfront area. (Kortum ms. 1977)

Facing **Hathaway's Wharf**, which dated back to 1856, was a one-story brick warehouse, divided with a firewall into **Hathaway's U. S. Bonded Warehouse No. 5 and 6.** This was rebuilt from the explosion of 1875 that

took place, according to a San Francisco **Chronicle** diagram, in back of the area that became a junkyard by 1887, in a shed that had been rebuilt into a stable on Harrison, next to a "rags" shop that marked the spot of the corner saloon whose occupants were blown up with the Giant Powder intended for removing Rincon Rock. The short stretch along Spear Street was cluttered with a collection of one- and two-story frame buildings that housed a saloon, restaurant, ships, and the wharfinger's office in the street itself, as well as the office for the watchman at Hathaway's No. 5 and 6. A wooden shed makes a right angle along the wharf and back to Harrison Street, connecting the square brick warehouse to the "bonded yard" and a small bonded Hathaway's U. S. Warehouse on Harrison with an adjoining junk shed, restaurant, and corner saloon.

The C-3 alignment cuts directly through the site of the **Hooper Flour, Grain, & Hay Warehouse,** a one-story frame structure, on the corner of the **Steuart Street Wharf.** This warehouse was not important enough to be listed in the city directories of the times so we cannot surmise as to the age of this building in 1887. The "Hooper" may have been C. A. Hooper, the well-known lumber dealer who owned the South End Warehouses in this south waterfront area, or it may have been George Hooper, who is listed as a commission merchant who owned the Colorado River Line Packets. In 1887, "Flour, Grain, and Hay" were stored here, in an obvious place for loading the big European grain ships of the '80's.

Block 1517 remained the same in 1891 but by 1899 some changes had taken place. The Imperial Salt Works now occupied Hathaway's one-story brick warehouse, with a salt-mill facing the wharf. The Overland Fruit Cannery had erected a building on the site of the bonded yard. Hooper's grain and hay barn was now occupied by the American Salt Company, which had installed a mill for grinding and crushing, and steam drying rooms. But in 1912 the entire block was vacant except for the corner saloon at the southwest corner of Harrison and Spear.

The Steuart Street Wharf, called Pier 20 by 1896, was the "other pier" chosen by the Army Transport Service in 1898 to be used for shipping troops and supplies to the Philippines. For that reason, "a contract has been awarded for the lengthening of 300 feet, which will make it a pier

Plate 20: Main, Beale, & Bryant, 1911 . . . Looking east towards Pier 34 from the corner of Main and Bryant. The seawall was in place but fill was still being added to the extensive puddles along Bryant Street. The Santa Fe track ties are being mounted on what is still a wharf on piles, just to the east of Bryant Street. The saloon at the corner of Main and Bryant bore the name "Santa Fe Depot" but its namesake was in back of the photographer, about a block away. (Bancroft Library)

Plate 21: The Gardiner City alongside Hathaway's in 1900 . . . The two-hundred foot barkentine, **Gardiner City** took on supplies for the gold seekers in Nome in the spring of 1900. Hathaway's was originally a big one-story brick warehouse, probably dating back to the late 1860's. The second story was added sometime after 1891. The building was altered again, to its present size, sometime before 1915, when the end section (appearing in the photo above the midships) was removed. (S. F. Maritime Museum)

760 feet in length, instead of 400 feet as formerly." (H. Com. 1900: 6) By 1908 the rebuilt Steuart Street Wharf/Pier 20 measured 834 feet by 100 feet across. The seawall section 9 cut this new extension off in 1910, and by 1912 Pier 20 angled east from the foot of Steuart and Harrison.

The C-3 alignment cuts directly through the typical corner saloon that remained on the southwest corner of Harrison and Spear from as early as 1887 (probably considerably earlier) and as late as 1912. By 1918, a five-story concrete building belonging to Tillman and Bendell, Wholesale Groceries covered the entire Block 1517.

Harrison Street Wharf, in 1887, was built out at a right angle to the Steuart Street Wharf. It was constructed in October of 1874 to a length of 280 feet by 80 feet wide. A month earlier Steuart Street had been connected to Harrison in preparation for the building of this wharf. In January of 1875 Harrison Street was connected to Spear and the original confluence of these wharves was in place, as seen on Map 4. (H. Com. 1875: 9) In 1887, the foot of the Harrison Street Wharf would have been 100 feet east of the C-3 alignment.

Block 378 appears on the early Muybridge panorama, taken from the Sailor's Home, looking out towards Steuart and East Street (Plate 8). In this picture the block, later a lumber yard, was a planked-floor coal yard belonging to the Black Diamond Coal Company. Roxburgh wrote about this period, in the late 1870's: "Inside of Spear and Steuart Streets was the Cornwall Coal Yard [Pierre Cornwall's Black Diamond Coal Yard]. The coal for this year came from Pittsburg Landing, and was what we used to call Mt. Diablo coal. It was brought down in barges towed by the tug **Rabboni,** with Captain Rasmussen in charge. Captain Matson, of the Matson Navigation Company, had a scow schooner which he called the **Ceasar Burns** in which he hauled coal also from the Pittsburgh landing. It was from this venture that Captain Matson got his first start in the shipping business." (Roxburgh 1933: 18)

During the 1880's Harrison Street Wharf was a convenient wharf for the **Pacific Pine Lumber Company** whose yards occupied the block bounded by Harrison Street to the south, Spear Street to the west, and Stueart Street to the East. The Pacific Pine Lumber in 1887 was owned

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by S. H. Harmon, whose name also appears on another yard at the corner of Folsom and Steuart. Samuel Harmon and Zimri Heywood were in the lumber business on Stueart Street as early as 1868, when their directory ad referred customers to Pier 4 on Steuart Street. In 1882, Hittell wrote, "One of the largest lumber-yards in San Francisco is that of S. H. Harmon, whose office is at Pier No. 13 Steuart Street; and he has branch yards at Point Sal, Santa Barbara County, and at San Buenaventura. To carry his lumber to market he has four schooners--the **Z. B. Heywood**, 107 ton; the **Gualala**, 95 tons; **Bill the Butcher**, 85 tons; and **Bessie Everdine**, 74 tons. He sells most of his lumber in San Francisco, but he ships to many ports on the southern coast of California, especially to Wilmington, to which point he has sent much redwood timber, some of it 43 feet long, for the sectional piling and bridges of the Atchison, Topeka, and Santa Fe Railroad. Since 1864 Mr. Harmon has been a stockholder, and is now the president, of the Gualala Mill Company, an incorporation organized in 1876. His associate shareholders are F. Heywood, W. B. Heywood, and C. L. Dingley [Dingley's large lumber yard was directly behind the row of business described along Bryant, between Main and Spear]--all of the stock being held by four persons. The company owns 17,000 acres of redwood timber, a railroad 9 miles long, 2 locomotives, and the Gualala sawmill at the mouth of the Gualala River. . . . All of the machinery of the mill is of the latest improved patterns and the capacity is 60,000 feet a day. . . ." (Hittell 1882: 590)

The Sailor's Home, a landmark of the area, overlooked the Pacific Pine Lumber stacks--3 million board feet stacked out in the open--and the masts of the ships at the wharves along Harrison and Steuart Street. It was from this vantage point, on a bluff, that the Muybridge panorama of about 1870 was taken. The Sailor's Home was about 500 feet to the west of C-3 alignment on the tip of old Rincon Point between Spear and Main, facing Harrison and the bay. A very early landmark, it was built between April of 1852 and the end of that year, first serving San Francisco as the United States Marine Hospital, then as a seaman's home, and finally as a home for indigents.

When it was built, it was one of the city's more imposing buildings,

being constructed of 2 million bricks, and standing four stories tall in the shape the Roman letter I. Upstairs verandas over 125 feet long looked to both the north and the south, so that the patients (capacity 500) could enjoy a fine view of the bay. (Le Count and Strong 1854: 236)

In the 1860's and 70's it was a splendid place for the "indigent or sick" but as the turn of the century passed, Captain Jack Shickell recalled, "The old Sailor's Home stood on Rincon Hill, but was run by the City and no longer for the exclusive use of seamen. One could get a supper, bed, and breakfast, and, most important, a chance to 'boil up,' that is boil clothes in a five-gallon can over an open fire on the lot surrounding the building. All of this in exchange for three hours of street sweeping. I spent one morning pushing manure along Beale Street. I wanted to be able to say I had stayed at the Sailor's Home, seeing that its days were numbered and plans were underway for razing the old pile." (Shickell ms. 1957)

The 1919 updated Sanborn Maps indicate that the former Sailor's Home was now a Cooperative Employment Bureau, a wood yard, and a home for the indigent. Below, Block 378 had run the cycle from a coal yard to a lumber yard and was once more a coal yard now belonging to the Western Fuel Company. The stables and sheds at the corner of Harrison and Steuart were empty.

The Harrison Street Wharf had become Pier 16 by 1900. Section 9b of the seawall from the foot of Folsom to the foot of Harrison was started on January 4, 1913, and not finished until May 6, 1915. The 1919 Sanborn Map now showed Pier 24 at the foot of Harrison, angling to the northeast.

Steuart Street From Folsom to Howard: (Sanborn Map Section N)

Map N covers an area from **Folsom Street Wharf #1** (at the lower right hand corner, up Steuart Street to Howard Street, including Howard Street wharves #3, #2, and #1. The C-3 alignment runs along Steuart Street, about 50 feet from the west curb and about 25 feet from the east curb.

The foot of Folsom Street had a wharf at the end of the street as early as 1868. The Manitz' Great Mercantile Map of 1869 indicates a wharf angling almost due north for half a block up East Street and partially enclosing some older slips. The California, Oregon, and Mexican Steamship Line used this pier for their coastal service during this period of the south waterfront history. The foot-shaped wharf remained pretty much the same up through 1883.

Roxburgh remembers the days of the 70's and 80's when the California, Oregon, and Mexican Steamship Line used the Folsom Street Wharf, commonly called the "Oregon Dock." "Next comes what was called the Oregon Dock, where the steamers returning to Portland, Eureka, Victoria and Mexico used to sail from. When the steamers were loading, the dock was full of freight, and trucks laden with freight would extend along the roadway for three or four blocks waiting to deliver their loads. These steamers brought in wool, potatoes, apples and grain. Now and then some Indian chief would come down from Portland or Victoria. You could see many a one going home with a load of potatoes. At the dock the vessels from Tahiti would come laden with oranges and bananas. The oranges would be sorted out on the dock, and those slightly specked would be thrown overboard. How the boys from Tehama School and surrounding neighborhoods would gather at the wharf and start fishing for oranges. Oranges were high priced then, but the boys got theirs without price, as all it required was patience in fishing, and the boys had that." (Roxburgh 1933: 17-18)

Harbor Commission reports of 1875 and 1877 show repairs of this pier from time to time, but the port receipts from the **Folsom Street Wharf** were never particularly large in this period. The change that took place in this section of the south waterfront was relatively late. The 1887 Harbor Commission Report notes, "Construction of a wharf on the easterly half of Steuart Street, between Folsom and Harrison Streets; also, of a wharf south of a center line of Folsom Street, east of Steuart Street; reconstruction of a portion of East Street Wharf, northerly from the center line of Folsom Street; also the construction of a pier projecting from the intersection of East and Folsom. . . . The dimensions of these

MAP N
Sanborn, 1887
Steuart Street
Folsom to Howard

OLSOM STREET

HOWARD ST.

HOWARD ST.

HOWARD

STEUART ST.

EAST ST.

STEUART

EAST

MISSION ST. W.

Bay of San Fr

376

377

779

780

JASON SPRINGER & CO LUMBER YARD

R. R. PATTRIDGE

LEWIS AND SWIFT

PLANING MILL CO

ENTERPRISE

ARCHITECTURAL IRON WORKS FOUNDRY

J. W. WESSON

SIMPSON BROS

HOUSE OF SMITH

HANSON (J.V.) LUMBER YARD

SAN FRANCISCO LUMBER CO

W. J. BURNS LUMBER YARD

M. O. KNIGHT

GEO. HAM

POLICE STATION

wharves and pier were as follows: . . . Folsom Street Wharf, 245 feet long, with an average width of 96 feet. . . . Folsom Street Pier, average length 413 feet; width, 100 feet." (H. Com. 1884: 78)

Folsom Street Pier #2 (actually 180 feet south of the foot of Folsom) was renamed Pier 14 on the Harbor Commission Maps of 1900. By 1905, the Sanborn Maps show the addition of a coal bunker extending the full length of the pier, with a tramway crossing Steuart Street leading to the bunkers of the **Western Fuel Company**, which had now taken over the southern half of Block 378 (formerly the site of the Pacific Pine Lumber Company, belonging to Samuel Harmon (as seen on Map M). R. Dunsmuir and Sons were the owners of this large coal operation. The Dunsmuir coal mines were located in Departure Bay, north of Nanaimo, and were in operation as early as 1870. Two steamships, the **Barnard Castle** and **Hylton Castle**, brought their coal to San Francisco in the 1880's. (Hittell 1882: 309) The 1915 Sanborn Maps (updated to 1919) show the Great Western Fuel Company coal yard still in operation but the tramways were gone, as was the large coal bunker. Pier 14 had been renumbered Pier 22. The Belt Line Railroad tracks followed the Embarcadero and curved out onto the Pier.

Folsom Street Wharf #1 was more precisely located at the foot of Folsom Street. By 1887, the **Oceanic Steamship Company** operated ships to Hawaii and the Far East from here. Claus Spreckels was the owner of the Oceanic Company, as a spin-off of his sugar empire. (See the N-3 Revised Report, for a description of the Spreckels sugar operations.) By 1896, the Folsom Street Wharf #1—then called Pier 12—was removed and rebuilt. (H. Com. 1896: 20) It was afterward considered one of San Francisco's "most modern piers" and therefore it was chosen for Army transport use following "the memorable naval victory by Admiral Dewey and his brave men at Manila Bay. The large force of United States troops sent to the Philippines embarked from here, and the volume of Government stores and supplies shipped from this port must be calculated by the thousands of tons. The establishment of the headquarters for the United States Transport Service here was indeed a great benefit to San Francisco. It augmented the trade of our merchants, opened up a new

avenue of labor for our artisans, mechanics, and workmen generally. . . . Folsom Street Wharf #1, one of our most modern piers, was assigned, and is now used by the Transport Department. . . . In addition to Folsom Street Wharf #1, Steuart Street, Pier 20, was assigned." (H. Com. 1900: 6)

Although Pier 20 saw service with the government shipping during the Spanish-American war, it was Folsom Street Wharf #1 that was both officially, and informally, known as the "Transport Dock." Senator Maloney recalls, "From this location the soldiers of the Spanish-American war sailed. And for many years all troops for the Hawaiian and Philippine Islands debarked from it. The Army Transports were the **Logan, Sheridan, Meade, Buford, Sherman, Thomas, Grant, Warren** and **Crook.**" (Maloney 1938: 5)

Plate 22 gives us a clear picture of the Folsom Street piers about 1900. The photographer was standing on Folson Street Wharf #2 with his camera pointed at the bows of U. S. Army Transport **Thomas,** which is pulled alongside Folsom Street Wharf #1, the Transport Dock. East Street, with its sailors' boarding houses on one side and the piers on the other, stretches from Folsom, past Howard and Mission to Market—directly in front of the new Ferry Building tower. The shed marked Pier 10 was the next pier north of the Transport Dock, just a few feet north of Folsom Street itself. The New California House is the building on the corner of Folsom and East Streets that advertises rooms for rent, as well as Jessie Moore Wiskey. The slip alongside the pier in the foreground reached to within a few feet of the C-3 alignment. As late as 1912, Steuart Street, a short block away, was still planked and on piles. The water that we see in the foreground extended back under the planked streets.

The C-3 alignment crosses Folsom Street and continues up Steuart Street to Howard. By 1887, Map N indicates some frame buildings—one-and two-story—in the first block between East Street and Steuart. On the whole, most of Block 779 was still open lumber yards, from Steuart Street to the Howard Street piers to the east. Steuart Street, at this date, would have looked directly out to the masts of the ships pulled alongside

Plate 22: Down East Street, from Folsom, ca. 1900 . . . The **Thomas** is moored alongside the Army Transport Dock, at Folsom Street Wharf #1, loading for the Philippines. The new Ferry Tower in the distance marks Market and East Streets. (**Chronicle** Library)

Plate 23: Unloading Salmon at the Howard Street Wharf, ca. 1900 . . . The British ship **Beacon Rock** (at the left) discharges cargo; the French ship **Bayonne** (the the right), unloads the coal she brought in as ballast. At the far right, a small gas schooner covers the wharf with kegs of salmon from Alaska. (S. F. Maritime Museum)

these piers. It was much as Roxburgh recalled: "Bear in mind, that Steuart from Market to Howard, was only built on one side, the east side being all lumber yards, or what were called piers, the vessels coming up to the piers and discharging their cargoes alongside the pier, the bowsprit of the vessels often extending over the street. The piers were built over the water, which extended back under the street quite a distance. All of the streets were planked over water. There was no Embarcadero, it being San Francisco Bay until filled in years later." (Roxburgh 1930: 5) The 1912 Sanborn Maps indicate that Steuart Street, at the corner of Folsom, was still planked on pilings as late as 1912.

Plate 23, taken at the Howard Street Wharf illustrates Roxburgh's interview with Dan Fairchild, recalling earlier scenes of the 1870's and 80's. Here the French ship **Bayonne** discharges cargo—probably coal carried as ballast from Europe for the exchange trip with grain—while the British ship **Beacon Rock** discharges her cargo on the far left. The barrels contain salt salmon bellies from Alaska, brought in by the small gas schooner whose rigging can be seen on the right. The horse was often an important adjunct to the stevedore on the waterfront. Here a rather tired nag walks back and forth to hoist out the barrels of salmon, which are in turn loaded into the dray, at the left, for delivery uptown. Plate 24 shows how the coal was unloaded from these big European ships. The donkey man (at the left) works the tub slung off the ship's rigging. The photographer has caught the moment he trips the load into the coal hopper. Both plates were taken about the time of the 1887 Sanborn Maps and give a clear idea of the kind of work that went on at these Howard Street wharves. (Senator Jack Maloney recalls the life of the stevedore at the turn of the century for the **South of Market Journal** in an article reprinted in the Appendix.)

The two-story frame buildings that filled the south end of Block 779 in 1887 are identified only as shops. A picture taken from the southwest corner of Folsom and Steuart, in 1913, gives us a better idea as to the nature of these small businesses, in a block that was not burned in the 1906 fire. In Plate 25, the lady with her knickered and hatted sons poses on the northwest corner of Folsom and Steuart, by the streetcar tracks that would have passed directly over the C-3 alignment. The

corner saloon is located in the back of "**The New California House,**" which faced on East Street, with rooms "to let" over the saloon. The frame saloon and restaurant next door on Steuart Street had the name "**Finland Exchange**" lettered on the window. This Finnish lodging house was famous for its good Scandinavian food and clean beds. Down the street, an onlooker stands just under the awning of the Pioneer Saloon, next to the **Pioneer Hotel**, built some time after 1891 but before 1903, when it was owned by Charles Ahlgren at 247 Steuart. The Pioneer Saloon of the early 1900's marks the location of the **Harbor Police Station** on the 1887 Sanborn Map N, where Roxburgh tells us "Captain Douglass was attached to this station at one time, and so were Officers Metzler, McGlynn, and McGrath."

In 1887, there were hay barns at Piers 22 and 21, owned by Scott and McCord and Somers and Healy. The **Simpson Brothers** and **J. W. Wesson** filled the rest of the block with open stacked lumber yards. Asa M. and Robert W. Simpson were lumber dealers and agents for the Coos Bay & Columbia River Packets. As early as 1864 they were on Pier 11, on Steuart Street, and by 1868 they are listed at this same 1887 location. Howard Street Wharves #1, #2, and #3 served as piers for the lumber schooners from the Pacific Northwest. We also find **John Griffen**, "the boat builder," at 239 Steuart Street--which would have been somewhere between the hay barns and lumber yards. With less formal addresses Roxburgh recalls, "Peterson was a boatman, at Folsom and Steuart, his son Henry was the champion oarsman of the Pacific. Smith, the rigger, was at Harrison and Steuart and John Griffen was a boat builder on Howard and Steuart." (Roxburgh 1930: 5)

For the next few years this area remained lumber yards and hay barns until about 1900, when Albert Enberg opened the "**Uleaborg House & Saloon**" at 206 Steuart and the likes of Persson, Hendrickson, Skog, and Gissler opened saloons on the west side of Steuart, towards Howard. By 1905 there were seven saloons, side by side, on Howard, around the corner from Steuart, and boarding houses and dining rooms, with kitchens to rear and outhouses beyond, filled the west side of Steuart between Folsom and Howard. By the time of the 1919 Sanborn Map for this block,

Plate 24: The Waterfront Action, ca. 1886 . . . A familiar sight on the Howard Street Wharf were the big European ships dumping their coal ballast to take on grain. The tub slung off the ship's rigging was tripped by the donkeyman (at the left), pitching the coal into the hopper for waiting draymen. (Bancroft Library)

the number of saloons has increased to the staggering number of 25 and the Y.M.C.A. had responded by building a two-story brick hotel, for Army and Navy personnel, between East Street and Steuart, opening on the waterfront at 242 East Street.

An interesting comment on the late development of filling in this area was made by Captain Fred Klebingat, who remembers that in about 1912 "East Street was all plank for part of a block between Howard and Folsom. The rest was all cobble stones. In the **Castle Saloon**, on East Street, a few doors from the corner of Folsom, and at Algren's on Steuart Street [Algren owned the Pioneer Saloon shown in Plate 25] when you went out in back you saw the water and the beach." (Klebingat ms. 1975) But Captain Klebingat also remembered that "**Three Finger Jack's Saloon**" across the street on the west side of Steuart, near Howard, was **not** built on piles at the same time. His memory reinforces other evidence that Steuart Street on the west side was filled in and built up at least 20 years before the east half.

By 1887, the Sanborn company had noted that the buildings on the beginning of the block on the west side of Steuart, just north of Folsom, were "old and dilapidated." These one- and two-story frame buildings that rounded the northwest corner of Folsom and Steuart included Harry Lorensen's saloon on the corner and Lamb's billiard parlor "a few doors down." A Chinese washhouse was a recent addition in 1887, next to a shipwright, followed by a few storage sheds.

The first business with any pretensions to size was the **Architectural Iron Works** at 230 Steuart Street. Housed in a two-story frame building, the pattern shops ran 100 feet along Steuart in front of the foundry, which was 100 feet square. The ironworks had a storage yard for foundry flasks at the back of the "old and dilapidated" shops previously described. Martin O'Connell and Oscar Lewis were the proprietors of the iron works, which was mainly devoted to producing ornamental fencing. The Architectural Iron Works was not an old business by Steuart Street standards, having been started in 1884; it operated at this spot until 1900. (Langley 1884-1900) By 1907, the site was occupied by the **Seaman's Institute**, a two-story concrete building, built possibly as an antidote to

the increasing number of saloons that gave the neighborhood its atmosphere of seedy impermanence.

The Sunday **Examiner** carried this account of the dedication of the Seaman's Institute Chapel: "The new Consul-General of England was humorous and happy in his brief address. Metcalfe and Balfour talked with intimate knowledge of the sea and sailors. Bishop Nichols made a delightful speech, and the chaplain and the director of the mission were earnest in their appeals for public cooperation in making the institute a help to all sailors arriving here." (S. F. **Examiner**, December 8, 1907) The **Seaman's Church of Saint Andrews and Cuthbert** was dedicated by Bishop Nichols with the backing of such influential men as parliamentarian Robert Balfour of England, head of the local shipping firm of Balfour, Guthrie & Company, and the British Consul-General, Walter R. Hearn. The British consul was often beseiged by indigent seamen, as described by Jack Shickell: "My chum and I tried the British consul, telling him that we were 'Distressed British Seamen' and that we were hungry. After much questioning they finally issued us each a meal ticket to some little joint way up Market Street. Next day we were back to ask for another. 'What do you want?' 'A meal ticket; we're hungry.' 'Get out of it--we gave you one yesterday.'" Shickell recalled the operation of the Seaman's Institute: "Called, 'The Flying Angel,' because of the house flag. No beds were available here. An occasional meal ticket, usually good for one 15¢ meal and a ticket for a night's lodging in a third-rate flop house, was all that was offered to a sailor really down and out—if he was willing to ask for and accept cold charity." (Shickell ms. 1957)

The sprawling **Enterprise Planing Mill** was the scene of a variety of craftsmen in 1887—routing mouldings, building boats, hammering coffins, turning newel posts and finials, jigsawing fretwork, planing lumber, and carving decorations for doorways, mantels, and cornices. The two-story frame factory stretched from Steuart Street back to Spear, a distance of 275 feet. Under its collective roof various craftsmen worked in small shops facing on Steuart Street next door to the shipwright, **George Boole**, whose partner, **George Middlemas**, was down the street. (Middlemas and Boole launched steam schooners from their yard on Channel Street.) The

coffin-makers worked in back of the boat builder and the Sanborn investigator noted "numerous occupancies" scattered about the premises. The carver and carpenter's shops faced on Spear Street, near the company's offices. As early as 1879 we find D. A. McDonald and Company starting the Enterprise Planing Mill on Steuart Street. In 1887 they were operating a comprehensive woodworking operation involving all of the crafts mentioned. The heavier planing machinery was mounted in the center of the factory, with glue pots, steaming equipment, and smaller machines scattered about in small lumber storage sheds. The primary lumber imported for their use was sugar pine, white cedar, Alaska cedar, ash, and redwood. As early as 1882, sugar pine was becoming more expensive and redwood was gaining increasing favor, as it did not warp, stain, or crack, as well as being resistant to termites. (Hittell 1882: 598) The planing mill was on this location up through 1903, but by 1905 the structure and all its shops were gone. In its place was W. G. Stafford's Coal Yard, which in turn gave way to a stable and wagon shed by 1919.

The shops and saloons that lined the north end of the west side of Steuart Street had a long and colorful history. Facing Steuart Street at #210 was what Roxburgh refers to as, "One of those old time grocery stores, you know, with a few groceries in front and a bar in the back. Meyers, the owner, had a horse named Bismark. After Bismark's day's work was done they would park the wagon in front, out on the street, and bring Bismark in through the grocery and bar out to his stable in back. This was necessary on account of the small lot on which the store was located, there being no room for a side alley. So Bismark had to come in the front way. This often discommoded Meyers' customers who had stepped in for a glass. The customers would have to huddle up close to the bar so Bismark could get by. As Dan says, the men of those days were very polite and would step aside for a horse." (Roxburgh 1930: 5)

In back of the row of six small saloons that edged up to Howard was a courtyard of some local fame. Again Dan Fairchild recalls to Roxburgh a memory that dates to before the 1887 Sanborn Maps. "Here was a small alley which the old man called **Green's Court**, a name displayed on a sign which hung over the entrance to the court [on Howard]. The

people who resided in Green's Court were of an obstreperous disposition and their quarrels were continued and extended far into the night; in fact there seemed to be no end to their quarrels, so Green, who was disgusted with the entire crowd, took down the sign, 'Green's Court,' and gave the place the name of 'Corn Beef Alley,' and this name remained for many years." If this local legend was not enough, the corner saloon on the southwest corner of Steuart and Folsom was the famous "**Three Finger Jack's Saloon**," recalled by Captain Jack Shickell: "There was 'Three Finger Jack's' on Steuart Street, with a hand, one finger missing, painted on the front window. I remember the place chiefly for a really fine model of a full-rigged ship he had. . . . Three Finger Jack ran a boarding house aloft over the saloon where my friend Fingal Larson stayed ashore between voyages. Fin was all that one would expect from a deepwaterman. The wooden ships were disappearing from the sea, but the iron men were still around. Fin was of that breed. Tattooed like a walking art gallery, lofty, and stayed strong enough to withstand any blast, at sea or ashore, he had a roll to his walk and fists half-clenched from years of gripping the ropes that advertised his calling." (Shickell ms. 1957) Three Finger Jack's was owned by Axel Bjorquist around 1900 and he had a shipping office in the back for scow schooner men, where "for a consideration" an Alaska fisherman could get a job in a bay scow. This small office is shown on Howard Street in 1887 with a carpenter's platform built on the roof, which belonged to Thomas F. Lacy, a ship rigger. Photographs taken in 1913 show that all of these early seaman's haunts were still going concerns, although the tenements of Corn Beef Alley were vacant. By 1918 only a few frame buildings held onto the corner of a largely vacant area--but among them was Three Finger Jack's, or his successor.

The number of saloons along this waterfront area is accounted for by a better understanding of their function. Bill Olesen explained, "There was a certain degree of respectability connected with some of the saloons. . . . A man could go into a saloon to meet his buddies, and they didn't have to spend every cent they had. They were among a society of men, and not subjected to any kind of harpies, hangers-on, or anything like that. Just seafaring men who came in to do a little friendly

Plate 26: Sailing Ships on Howard Street, 1896 . . . The 60 foot reach of the bowsprit of the British ship **Maxwell** was matched by the Main-built "Downeasters," just beyond. (S. F. Maritime Museum)

Plate 25: Sailor's Boarding Houses on Steuart Street, 1913 . . . The camera catches a matron with her sons by the car tracks at the New California House. Down the street, the Finnish Exchange and the Pioneer Hotel. (S. F. Maritime Museum)

drinking. The sailors' boarding houses and saloons were not primarily sink holes of sin. They were strictly in the business of attending to the wants of the seafaring men as they saw it in those days. . . . The old male type saloon was a place you could store your clothes, get a job, and if you had any reputation, borrow a few dollars when you needed it without paying any interest. This area was generally described as being between Steuart Street and East Street, extending down from Market two or three blocks." (Olesen ms. 1960)

Howard and East Streets: To the Ferry Building (Sanborn Map Section 0)

The 1887 Sanborn Map O shows us the waterfront at a time when all of Block 780, between East Street and Steuart Street, was a series of connecting lumber yards, dotted with small offices and sheds, and marked by an occasional hay barn. Only the southwest corner of the block had a few shops and saloons clustered at the corner, while the north edge had a fringe of one- and two-story saloons and shops, typical of those seen on Steuart Street. The block would not have looked very different from Plate 6, described earlier. Henry Dutton's Hay Barn in the 1867 view is still in place and the open stacks of lumber that protrude out into the street were still typical in 1887.

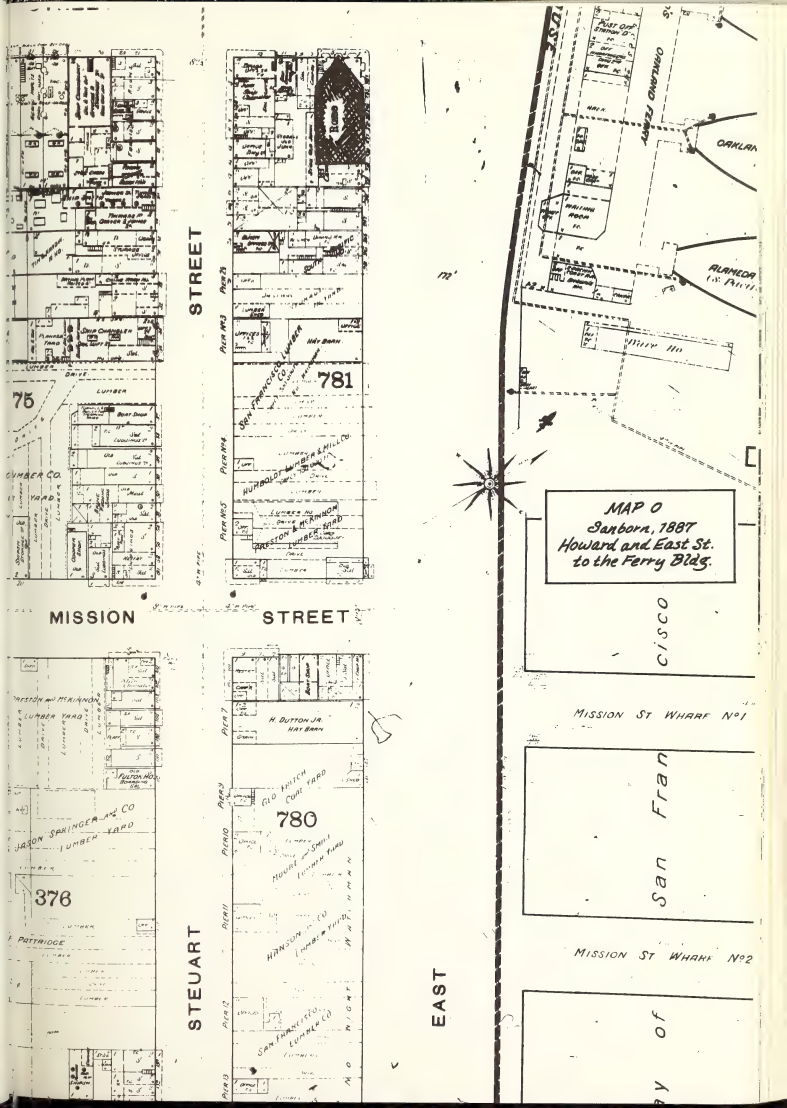
Life on the corner of Howard and Steuart, towards East Street, was well remembered by Roxburgh: "On the corner was the Young America Saloon, run by Woodley and later by Frank Kneppenberg. Back of the Young America, William Pinkney, the boatman, had his stand. Next to the Young America Saloon lived the Engleharts, with two children—John and Lizzie. Next to the Engleharts was Adams and Blinn's lumber yard and shipping business." (Roxburgh 1930: 8) The saloon, boatman's stand, and shop, with its rooms for the Engleharts upstairs, took up no more than 50 feet of the corner of Adams' Lumber Yard, which covered the block at the end of the Howard Street Wharf.

W. J. Adams' lumber yard appears on the Manitz Mercantile Map of 1867 on what was then Pier 17 on Steuart Street—a location just south

of Howard on Steuart. The city directories locate Adams at this pier as early as 1857. William J. Adams was a pioneer lumberman of the Pacific Northwest. He had a mill in Washington and shipped on his own lumber schooners to his Steuart Street locations. With the years he expanded from Pier 17 to include piers 15, 16, 17 and 18. His partner was Samuel P. Blinn. By the time of our 1887 Sanborn Map (O) the operation was somewhat reduced, to what was then known as Pier 13, on Steuart Street. His lumber packets docked across East Street at the foot of the Howard Street Wharf. Adams' lumberyard remained in operation here until the turn of the century, when the San Pedro Hotel was built across the entire block, facing on East Street and extending back to Steuart Street. This three-story frame lodging house for sailors was replaced by a one-story reinforced concrete building by 1918 that housed offices, restaurants, a barbershop, a pool hall, and a second-hand clothing store.

The **Howard Street Wharf** is listed in the city directories as early as 1857 but it was not until 1865 that the first Harbor Commission report noted, "A new and substantial wharf has been erected at the foot of Howard Street, four hundred and seventy-five feet long, and eight feet wide, connected with Steuart Street by a bridge or thoroughfare two hundred and twelve feet in length by thirty feet in width. This structure was completed May 6th, 1865, at a cost, as per contract, of $29,000." (H. Com. 1865: 21) The Howard Street Wharf—later called Howard Street Wharf #1—remained much the same as it appears on the 1887 Sanborn Map (O) up through 1905, when it was lengthened to 724 feet. (H. Com. 1907: 15)

The Howard Street Wharf and the Mission Street Wharf, just to the north, were closely associated with the early lumber trade along East Street. In Roxburgh's descriptions of the 1870's he recalled, "Between Mission and Howard Streets were lumber yards. When a vessel came in laden with lumber it would have to wait until high tide. A tug would take the vessel and start full speed for the shore until the vessel was three or four feet out of water. [Note: A Muybridge stereo of about 1870 confirms this phenomenon.] Then a barge would be put alongside, into which lumber was discharged until the vessel was light enough to


STREET
781
MISSION
STREET
75
LUMBER CO.
YARD
780
376
STEUART
EAST
MAP O
Sanborn, 1887
Howard and East St.
to the Ferry Bldg.
MISSION ST WHARF No 1
MISSION ST WHARF No 2
OAKLAND
ALAMEDA
San Fran
cisco

get up to the dock. The bay was not very deep here. Some of the lumber firms here were Herrick-Moore, Pope & Talbot, A. M. Simpson, and Adams & Blinn. At the Howard Street Wharf was Pinkney, the boatman who carried the newspapers to Oakland by rowboat. Both Mission and Howard Street wharves were very long, and many deep water vessels would dock there. The tugs **Lookout** and **Donald** lay alongside the dock." (Roxburgh 1933: 17)

Howard Street at the turn of the century still preserved a distinctly romantic flavor that can be seen in Plate 26. Seen here, side by side, are classic representatives of the greatest maritime traditions of the last days of sail. In the foreground is the steel British ship **Maxwell**, complete with a figurehead in the form of a crouching lion. She and a thousand sisters carried such bulk cargoes as California grain in the Cape Horn trade with Europe. Beyond her is a wooden, Maine-built "Downeaster," the successor to the Yankee clippers of the 1850's. As a final element in this symbolic scene, in the background is a West Coast-built three-masted lumber schooner at Mission Street Pier #3. The steel skeleton of the rising Ferry Building tower dates this picture as early 1896. The C-3 alignment passes within 50 feet of the bowsprits of these ships, directly down East Street. This picture demonstrates why a walk down San Francisco's waterfront was such a satisfying spectacle. Wheelan describes this part of the waterfront in the 1880's as follows: "Sunday was a great day along the waterfront. Hundreds of people strolled along the Bulkhead, enjoying the sea breezes and looking upon ships from all over the world. There were but few steamers, and they usually docked a long distance away--at the Pacific Mail Dock, at the foot of First and Brannan Streets. This last named wharf was covered over, while the wharves I speak of--Mission, Howard and Folsom--were not. At intervals along the Bulkhead were small stands where fruit was offered for sale, exposed upon small tin trays. Many of the men and older boys fished for sharks at the ends of the wharves and many were caught, always creating a great deal of wonder and excitement. The small boys fished for shiners and pogies alongside the piles and like all fishermen, boasted of their skill the next day at school, prevaricating about the 'Big one that got

away.'" (Wheelan 1926: 9)

In 1887, just beyond Adams and Blinn's lumberyards, was the lumberyard of the **San Francisco Lumber Company.** This company was a cooperative for various retail lumbermen. The president of the company was Adams, of Adams and Blinn. Formed in 1881 for the purpose of "general retail lumber trade," it primarily served builders and contractors. The company advertised "No less than five offices located in the two-story building at Pier 12 Steuart Street . . . yards at Pier 12, Third and Berry, and Pier 3 on Steuart." (Langley 1882) They continued their Steuart Street operations until 1905, when they moved entirely to the south side of Channel Street between Fourth and Fifth.

The 1887 **Hanson Lumber Company** dated back to a much earlier period of Steuart Street history. Charles Hanson was the proprietor of the Tacoma Mills, in Washington Territory, as early as 1866, when his directory listing on Steuart Street was Pier 4. By 1868 he had moved to Pier 9. Hanson owned some 30,000 acres of timber on Puget Sound. By 1882 he had four sailing vessels—the bark **Samoset,** the ships, **Dashing Wave, Shirley,** and **Canada,** as well as a large steam-tug, the **Tacoma,** "considered to be the finest vessel of her class on our coast." His mills in the Northwest produced 175,000 feet of lumber and 40,000 laths a day. In addition to his timberlands, mills, and ships, Hanson owned "54 dwellings, a telegraph office, and a store in Tacoma. He also ran 15 logging camps in Washington and he had a local logging and milling operation at Redwood City." (Hittell 1882: 588)

Adjoining Hanson's yard on Steuart was the **Moore and Smith Lumberyard,** whose origins dated back to 1868 when Austin D. Moore and Joseph P. Moore were importers and commission agents near Front and Jackson. It was at a later date that Hiram O. Smith joined Austin Moore in the lumber business. By 1881 they had opened their Steuart Street operation, which continued until the turn of the century.

The area belonging to Adams and Blinn, the San Francisco Lumber Company, and Hanson and Company, is shown as "all burned" on the updated 1907 Sanborn Insurance Maps. The fire map of the 1906 earthquake indicated that all but the San Pedro Hotel at the south end of the block

was destroyed. (U.S.G.S. Map 1907) By 1918 this same site was entirely covered, from East Street to Steuart Street, by the Maritime Building—a two-story, frame rabbit warren of saloons, restaurants, barbers, tailors, shipwrights and ship chandlers, pool halls, and pawn shops—all located on the first floor, with sailors' lodgings above. The site of the Moore and Smith lumber yards had a smaller, brick building with similar tenants.

The lumber yards on Block 780 ended with **George Fritch's Coal Yard,** located on this same site in 1883. Fritch had been an early coal merchant in San Francisco—an associate of R. D. Chandler, a prominent coal dealer of the late 1860's. It is not clear when this yard opened on Steuart Street, but it was still operating here in 1891. By 1906 the site was covered by a frame two-story building—primarily sailor's rooms for rent upstairs with the same type of waterfront milieu downstairs that was associated with the Maritime Building, a few doors to the south. This, too, burned in the 1906 fire and was replaced by a brick and concrete building in 1912.

H. Dutton's Hay Barn appears in a photograph dated 1867 (Plate 6) and was still in operation in 1891. Henry Dutton was at Pier 7 on Steuart Street in the 1868 city directories. He was associated with the Farmers & Merchants Bank of Savings in later years. After 1900 the site, like Fritch's coal yard, was covered with frame buildings that were burned in 1906, to be replaced by brick buildings by 1912. The new buildings were primarily used as lodgings and for saloons and restaurants. The Salvation Army used the 2nd floor at this address as a headquarters in 1918.

In 1887 the northeast corner of Block 780 contained a scatter of one- and two-story frame buildings. On the southwest corner of Mission and East was the **Uncle Sam Saloon,** which Roxburgh recalled as "The favorite place for the captains to stop off." A grocery store, a chop house, the **Redmond Tug Boat Office,** and **Martin Vice's** boat shop, rounded the corner from East Street on the south side of Mission. Martin Vice was building boats in San Francisco as early as 1858. In 1864, his boat shop was photographed near the foot of Kearny Street, a site later occupied by the Merchant's Dry Dock. [See the Report on N-3 and N-5 contract areas, Plates 7 and 7A.] As early as 1875 the city directories list Martin

Vice "The Boat Builder" at 22 Mission--the site shown on the 1887 Sanborn Map O. At the same time, he shared another boatbuilding office at 42 Steuart (between Mission and Market on the west side) with Thomas Vice. (Langley 1875-87) By 1905 all of these waterfront frame buildings were replaced by the Sailor's Union of the Pacific. This narrow strip of Block 780 did not burn in 1906. By 1918 the land-use survey agent noted that this building was largely vacant--except for the corner saloon.

The block on East Street from Howard to Mission was by 1907 a solid complex of sailor's boarding houses--some were rambling two-story frame buildings, like the Maritime Building, and others built of brick and concrete. Their names appear on a map published for seamen by the San Francisco **Examiner** for the Seamen's Institute Church, on East Street. North from Howard to Mission they were the Tacoma House, Maritime House, Hotel Lincoln, Harbor Hotel, Commodore Hotel, and, across Mission Street, the Ferry House and Pacific Hotel. (S. F. **Examiner** December 8, 1907) Just as the waterfront saloon served also as a clothes drop, lending agency, information center, and sometimes hiring hall, the sailor's boarding houses along Steuart and East Street went far beyond the usual concept of the boarding house. A good recollection of the operations of boarding houses is found in an interview with Captain Jack Shickell. His waterfront life in San Francisco started about 1910, with his arrival from England, and was seasoned by a long and close association with San Francisco's waterfront.

"**Scab Johnny's** lodgings on Steuart Street probably characterize the lowest ebb a sailor could reach on the waterfront and still survive. Scab Johnny had his boarding house on Steuart Street, only it was just a shack and there wasn't much room in it. He had a unique way of accommodating the overflow, a condition that set in when things were slow along the front and jobs were hard to find. I remember the first time I made application to him; he was standing on the board sidewalk out in front, whittling with a long knife.

'Can you put me up, Johnny?'

'Are you one of my boys?'

'No-o'

'Say "No, sir"'

'No, sir.' (I was just a kid, he didn't want any impertinence.)

"He gave me 15 cents (that was in lieu of meal tickets for the three meals a day he was supposed to supply--at a nickel for a 'coffee and --' it theoretically kept us fed). Then he showed me where I was to sleep. He walked down the sidewalk, scanning chalk marks, and then leaned over and lifted a couple of the boards. Underneath was a 'donkey's breakfast' on the ground--there was a couple of feet of clearance under the board sidewalk. As a matter of fact, there was a whole row of straw mattresses under the sidewalk, side by side, their confines defined by chalk marks on the planks above. Johnny issued blankets at the shack and every night there were a number of us making use of this out-of-doors dormitory. In the morning you had to be careful not to rise too abruptly and bump your head. It was quite a sight to look down that sidewalk of a morning, seeing the planks tipped up and the heads appearing like so many Lazaruses."

And Shickell recalls another "haven" for seamen--**Billy Cane's** boarding house: "I spent three days in Billy Cane's boarding house one time. . . . He had a bosun to run things, and every morning the occupants were told off for various jobs after breakfast. 'Now, you three shoot snipes today. Get back by suppertime. You and you and you catch some crabs.' Two sacks supplied. One was kept on the wharf for the crabs of legal size in case a policeman came along. The other sack was hung under the wharf for under sized crabs. That night these were sold up in Chinatown. . . .

"The bosun assigned maybe four men to go through the produce market. They were each given a sack and were on their own--likely rejects from the sweepings piled up at the curb, or any fruit or vegetables they could swipe from the crates as they passed down the street.

"Being young and of fresh appearance and with moderately good clothes, the bosun gave me a special assignment. He led me to the sidewalk opposite the Colchester Hotel, as this modest rooming house is called now. He pointed out that the man behind the desk would occasionally leave that post, and then I was to slip in and a few doors up the hall I

would find a wash room. I was to clean up carefully, brush my hair, polish my shoes, and then rejoin him.

"Next (when this had been accomplished--getting out past the desk clerk was no trouble; it was getting in where you might be challenged if you weren't careful) he gave me a dime.

"'There is a big wholesale meat house two blocks up. Get in the back way, find a soft-hearted looking butcher, and tell him you're hungry. Tell him your mother is sick and that there is no food in the house. Tell him you want to make a stew for her; offer him the dime. Be polite. Work on his sympathy and get the best you can. And bring the dime back.'

"I was fairly successful with this act and returned with some stew meat. The bosun was encouraged: 'Now there is a Danish bakery on Market next to the Alameda Cafe. Take the dime and see if you can't get a cake, a stale one will do. Only if the big fat blonde is behind the counter, watch out and try one of the other girls. Bring back the dime.'

"By these methods, when the day was done, the occupants of Billy Cane's had the ingredients of a meal. The meat and vegetables went into a perpetual mulligan. The snipe shooters returned with a sizeable collection of tobacco and any corner cigar store would give you cigarette papers if you asked right. The only thing missing was liquor and there was even a way to forage for that.

"One of the younger, tougher looking sailors, would be persuaded to go up to the Barbary Coast where there was an amusement place that featured a broken down ex-pug. Any one who could stay in the ring with him for three rounds got $5.00. Three or four men would escort our champion up there to see that the pay-off was fair and square. It didn't matter if he won; at the end of three rounds he would emerge bloody and roughed up and collect the $5.00. His escorts would see that he brought it back to the boarding house. It might last for several days, because a delegation was then sent to the Italian-Swiss warehouse, which was nearby, with 25 cents and a small pail which was filled for that price." (Excerpts from Kortum interview with Captain Jack Shickell, May 5, 1975.)

The living arrangements described by Shickell were decidedly at the lowest level of the accommodations that seamen could find along the waterfront--an area from which, by all accounts, they seldom strayed. Thorwald Olesen's description of houses along East Street gives a picture of the more typical lodgings: "Johnson's boarding house was between East Street and Steuart Street, and had the whole length of the block as a boarding house on the upstairs level. You went in at about the center of the block--those blocks were not very long. It was a street where there would ordinarily be only three or four houses, facing on Howard Street. You walked into a saloon and the other entrance went to the rooms going upstairs and into the dining rooms. Johnson's Cigar Store [196 East Street, in the building that housed the San Pedro Hotel] was in one end of the building on the ground level, and there may have been a restaurant at the other end, but I can't remember exactly. Anyway, it was like a 'T.' A good part of it was a large sized dining room. . . . All the boarding houses had the rooms upstairs. Drinking was done down in the saloon, and when the fellows got too much, I presume they went up and went to bed. . . . There were no women around except the maids to make up the beds. If the boarding-house master's wife didn't do it, they had a chamber-maid. . . . Board and room was $4.50 a week, and they set a fine table, [Katto Johnson's on Steuart Street] breakfast, dinner, and supper. It was served family style." (Olesen's narrative ms. 1960)

According to a San Francisco Maritime Museum study, "There was a considerable difference between 'coastwise' boarding houses and their 'deepwater' counterparts and between coastwise sailors and offshoremen. Deepwater sailing ships signed a crew for a single voyage and shipped all, or most, of the crew at a single time, while coastwise ships, with their short runs and quick 'turn-around' time offered as much continuity of employment as the ability and inclinations of the seaman permitted. The coastwise seaman's employment was more comparable to that of the cowboy or farm hand than to the seasonal crop picker.

"Since the economics of deepwater sailing ship operations required the 'delivery' of a full gang of 'workers' at a stated time and place, much

as a crop-picking or cannery operation did, it developed an institutional form centered around those capable of delivering the men as they were required. Yet since shipping as a whole is not completely seasonal, since the individual seaman could be 'resold' without a lengthy period of unemployment, a rather more elaborate institution devoted to his preservation and employment developed than was possible in other fields dominated by the labor contractor.

"This institution was world-wide, and its operation on the San Francisco waterfront is recounted by Thomas Crowley, 'All the boarding houses were under the guidance of the shipping master. There were three well-known shipping masters: Chandler, Hunt, and Norton. These fellows solicited the ships from the Captains up at **"Lime-Juice Corner."** Then, when a ship was ready to go to sea and wanted its crew, why all the boarding houses would bring their men there. The captain would pick them out, but he could only pick one or two at the most from any one boarding house, because they had to be divided proportionally. The coastwise boarding houses were more frankly in the boarding house business and were not part of a highly organized labor-contracting cabal. . . . It was in the interests of these boarding house keepers to keep their clientel, rather than to sell it.'" (San Francisco Maritime Museum ms. 1960)

The boarding house culture described on the previous pages existed all along the Steuart Street section of the C-3 alignment from as early as 1870 up through 1919. The block between Steuart Street and East Street, from Howard to Mission, changed character from the open lumber yards of the 1880's to the close-packed frame and brick boarding houses with their attendant downstairs activities from the 1890's up through 1919. The same story took place to the north, on Block 781, from Mission to Market.

The **Mission Street Wharf** at the foot of Mission Street first appears on Coast Survey Maps in 1857 (Map 2). At that time it was the only wharf of any length along the long stretch of Steuart Street. Mission Street itself appears as a sort of causeway across the giant puddle of the still unfilled "Tar Flat." In 1864 the wharf was "improved and extended" to double its original length of 142 feet. (H. Com. 1865: 4) Receipts

Plate 27: View South Down East Street, from the Ferry Tower, ca. 1898 . . . This remarkable shot looks right down along the C-3 alignment just before the turn of the century. A present-day San Francisco landmark can be found at the corner of Mission and East (The Embarcadero). The three-story brick building with a mansard roof is only partly obscured by the blur of a fast-moving streetcar. Howard Street was just beyond the Western Fuel Company's overhead coal bunker trestle. The Army Transport Docks were at the end of East Street. (Los Angeles County Museum)

jumped from $416.15 in 1863 to $3,087.45 by February of 1864. (Ibid. 7) By 1877 the Mission Street Wharf had been extended to 600 feet (it was rebuilt in 1882-83) and Mission Street wharf #2, 175 feet to the south, was added. (H. Com. 1882: 7)

One of the best descriptions of a boy's life near the Mission Street Wharf, as it appeared on the 1887 Sanborn Map (O), was written by Albert P. Wheelan who moved to the wharf area in 1883. He and his family lived at 104 Mission, across from the Preston and McKinnon lumber yard that covered the southern tip of Block 781. Wheelan wrote: "The wharves, I remember, were Mission No. 1 and No. 2. . . . Two beautiful South Sea island schooners—models of ship-building--the **Tropic Bird** and the **City of Papeete**, docked at intervals at Mission No. 1. What an event their appearance was. They were manned by South Sea Islanders whose weird appearance and soft language and picturesque costumes, laughter and song, awakened a desire in the heart of every lad for miles around to become sailors and leave their heart-broken parents for a voyage to the Seven Seas. The cargo of these vessels consisted of copra, luscious lemon-colored oranges and coconuts. There was something about these schooners that appealed to all of the boys.

"The ships were unloaded with rope slings, at the end of which was a large rope net. The oranges and coconuts were loaded in the holds of the vessels, the nets being filled with the fruit and nuts, and were then hoisted by hand to the wharf. Many of the oranges and nuts would slip out of the net and fall in the water. Then the ingenuity of the boys would come into play. Every boy of the wharf had a couple of bed springs, tied with string, so that each spring was formed like a cup, this being attached to a long piece of hay rope, and they would fish the fruit and nuts from the water.

"This salvaging of South Sea products from the Bay was not frowned on by those in charge of the unloading of the vessels, and I think that many an orange and coconut was allowed to fall overboard to watch the excitement of their recovery. When there was a lack of fruit and nuts in the water, many of the boys would take desperate chances and grab a handful and run down the wharf pursued by an irate watchman, who

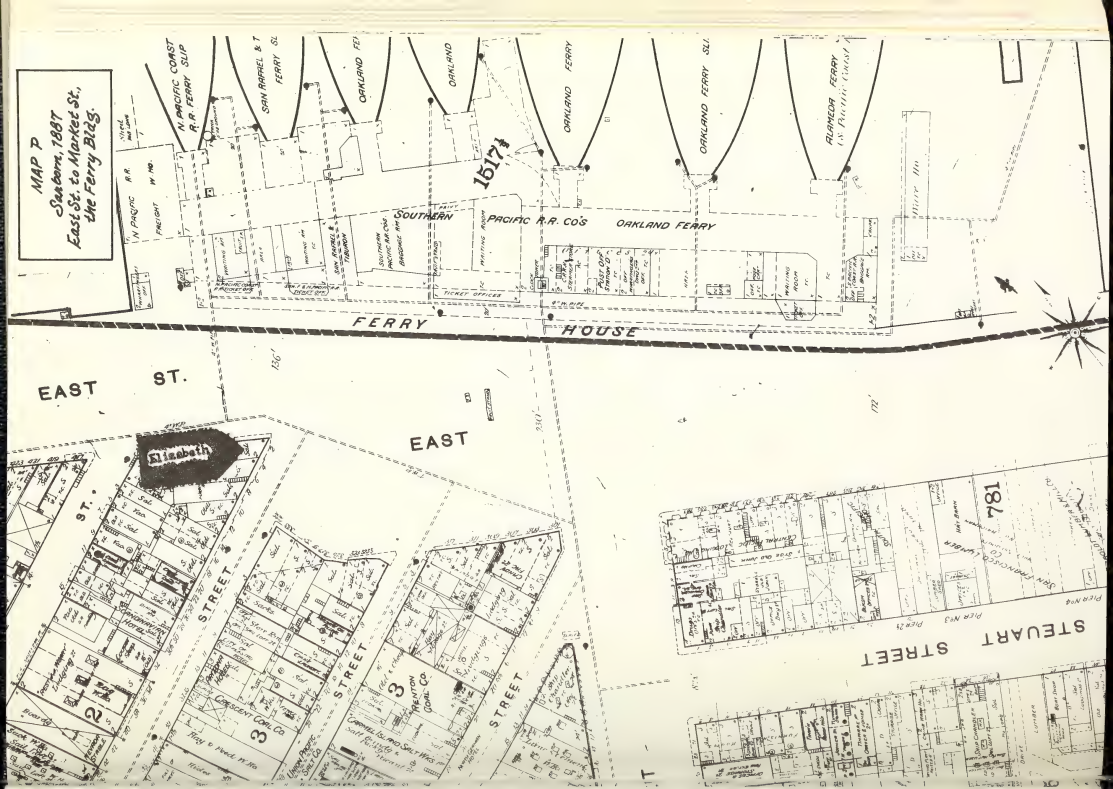
was always out-distanced by the youthful sprinters." (Wheelan 1926: 8 and 24)

This stretch of the waterfront, described by Wheelan, can be seen in Plate 26. Pier 6 was the Howard Street Wharf. The ships pulled up to the north are at Piers 4 and 2--the new numbers assigned to Mission Street wharves #2 and #1 by 1896. A view of East Street from the new Ferry Building tower is shown in Plate 27. The streetcar tracks curve around the foot of Mission Street. The three-story brick building facing Mission Street on the corner of East Street is the large sailor's lodging house previously discussed. The old H. Dutton Hay Barn that dated back to 1867 was still visible, next door to the lodging house on Mission and East. The Western Fuel Company's overhead trestle runs across East Street from Mission Street Wharf #2. The Uncle Sam Saloon has a white frame front on the corner of Mission and East. By the date of this photograph, all of the lumber yards in Block 780, from Mission to Howard Street, had been replaced by sailor's lodgings. The streetcar tracks turn west on Howard Street. Drawn up beside the Ferry Building is the sternwheeler **Apache.**

By 1908, Mission Street Wharf #2 was topped with a full-length coal bunker, and Mission Street Wharf #1, at the foot of Mission, was extended to 784 feet. But by 1909 Mission #1 was removed from the south end of the Ferry Building slips to make room for seawall section 8, started December 6, 1909, and completed March 10, 1910. (H. Com. 1896-1910; Dow 1973: 240) The 1915 Sanborn Maps of the foot of Mission show the U. S. Post Office Ferry Station on the Embarcadero, just opposite Mission Street, within about 20 feet of the C-3 alignment. The ferry slips have been added to the south, so that slips 8, 9, and 10 fill the area of the former Mission Street Wharf #1. Offices on these slips belonged to the U. S. Post Office, American Express, and Wells Fargo Express.

East Street to Market: The Ferry Building (Sanborn Map Section P)

The C-3 alignment runs down East Street on the 1887 Sanborn Map (P)


MAP P
Sansom, 188T
East St. to Market St.
the Ferry Bldg.
N. PACIFIC COAST R.R. FERRY SLIP
SAN RAFAEL & T FERRY SL
OAKLAND FE
OAKLAND
OAKLAND FERRY
OAKLAND FERRY SL
ALAMEDA FERRY
1517½
SOUTHERN PACIFIC R.R. CO'S OAKLAND FERRY
FERRY HOUSE
EAST ST.
EAST
Elizabeth
STREET
781
STEUART STREET

within 25 feet of the "Ferry House" built by the Harbor Commission in acknowledgement of the growing traffic between Oakland and San Francisco. It was this business that was to shortly make Block 781 too valuable for the use of lumber companies as open yards.

Just past the corner saloon was the **Preston & McKinnon Lumber Yard,** with lumber stacked the full 125 feet back to Steuart Street. Otis J. Preston and John J. McKinnon had been in the wholesale and retail lumber business on what was called Pier 5 on Steuart Street since 1860. They were still on this prime piece of waterfront property as late as 1891, but by 1898 photographs show us a two-story frame building, the Ferry House (a boarding house). In 1912, the Sailor's Union had a brick building on the same site.

The **Humboldt Lumber and Mill Company** was next on East Street, and the **San Francisco Lumber Company** was just beyond. The latter was a cooperative venture with the pioneer lumber broker William J. Adams as president. (This is the second of their yards to fall within 150 feet of the C-3 alignment.) Both of these lumber yards were replaced by brick buildings before 1905. Very little, if any, of Block 781 between Mission and Market survived the 1906 fire, so that all of the sailor's boarding houses that appear on the 1915 Sanborn Map of this area would have been built after the earthquake.

Just beyond the 1887 lumber yards was a haybarn and a storage yard, beyond this the **Southern Pacific Hotel,** a two-story frame lodging house with a kitchen in the rear and the usual saloon on East Street. By 1905 a sail loft was in place of the haybarn and the Seaman's Institute had a brick building running from East to Steuart with a ship chandler's shop on East Street. These buildings were replaced by brick buildings after the 1906 fire but the waterfront activities continued, as the insurance maps list the tenants, variously, as "Barber & saloon, Seamen-outfitter, Saloon, Ship-outfitter, cigars & stationary, Gent's furnishings, Southern Pacific Baggage storage, Tea & Candy, Drugs, Tailor, purchasing agent, and offices."

Next to the Southern Pacific Hotel was the **Central Pacific Lodging House,** a three-story frame structure that ran 150 feet along East Street

to Market. In 1887 it was not a very prepossessing hotel, as the back court that ran down the center of the block was used for "storing old junk." A drawing of this hotel can be seen in the Illustrated Directory for 1895 in Plate 30. The **Ensign Saloon** on the corner of Market and East marks the spot where Captain Lawson remembered sinking the **Rome.** This area, too, was consumed in the 1906 fire. By 1918 a brick building covered the lot. The tenants were once again the saloons, pool halls, sailor's-outfitters, and the like on the first floor with offices above.

Across East Street from Block 781 were the ferry slips and the **Ferry House**, as it was called in 1887. Cable cars and ferries have always been closely associated with San Francisco. Just about as soon as Oakland was chartered as a town (1851) it became obvious that it was important to establish a public ferry. In spite of stiff afternoon westerly winds and predictable summer fogs through the Golden Gate, Charles Minturn, who had a background of experience in river boating, got the franchise for the first public ferry. Minturn ran the Contra Costa Steam Navigation Company's vessels **Erastus Corning** and **Kate Hayes.** The California Pacific, a railroad with lines from Sacramento to Vallejo, connected to San Francisco with the **New World** and the **Capital.** Over the years, some thirty major ferry routes crisscrossed San Francisco Bay--each with its highly partisan constituents, all convinced that this was, indeed, the only way to travel. (Harlan 1967: passim)

In 1875 the Harbor Commission built four new ferry slips and sheds on the north side of Market and the north side of Clay Street. Commercial and Clay Street wharves had to be removed to accommodate the growing ferry business to the East Bay. (H. Com. 1875: 15) The Central Pacific's ferry landing had been at the Davis Street Wharf until 1875. The railroad's new terminal, on the site of the present Ferry Building, was opened on September 4th of that same year.

The Ferry House shown on Plate 28 is about the way it looked at the time of the 1887 Sanborn Map P. This was the transportation center of San Francisco. Here cable cars and horse cars, express wagons and carriages met the Oakland, Alameda, and Berkeley ferries that were the last connecting links to such far away places as were listed on the pointed

Plate 29: Sidewheel and Walking Beam: the Ferry Building, 1886 . . . The business end of the "union ferry landing" is what gave the Market Street center of the San Francisco front a character that matched in piles and board what New York and London railroad terminals could do with travertine and glass. The C-3 alignment runs right along the west side of this ferry shed--the anchor of the modern city front. (Bancroft Library)

Plate 28: The Old Ferry Building, ca. 1889 . . . In this view the south part of the Ferry Building begun in 1875 has already been torn down to allow for construction of Section 8B of the new seawall. (Bancroft Library)

wooden arches: New York, Chicago, Sacramento, Los Angeles, San Jose, St. Louis, Portland, Yuma, Calistoga, Napa, Red Bluff, and Cloverdale. Station D Post Office is just at the foot of Market itself, as seen in both Plate 28 and on the Sanborn Map P. Real estate hustlers promoted giant auction sales of cheap lots in Niles, Peralta Park, and Berkeley--where you had your pick of "Choice villa lots 60 by 30." This was the age of the booming real estate sales that promised every man his own California villa with a palm tree in front.

The wooden tower of the "old Ferry Building" can be seen in Plate 29. From left to right, the Southern Pacific's **Newark** (from Alameda), the Nickel Ferry's stern-wheel **Alvira** (from downtown Oakland), the S. P.'s **Piedmont** (from Oakland Mole), the San Francisco & North Pacific's **Tiburon** (from Marin), and the North Pacific Coast's **San Rafael** (from Sausalito) lie in the ferry slips. Just how big the ferry business became can be seen from the gross receipts of the Harbor Commission. By 1884, receipts from the ferry slips totaled $88,796.75--more than three times as much revenue than from any other source, the nearest runner-up being $38,692.94 from the Southern Pacific tolls. The ferry business continued to be the biggest business on the waterfront in terms of gross receipts for the Harbor Commission. By 1896, when the new Ferry Building opened, receipts were up to $91,887.98. And by 1900, the business had increased to $121,238.30. (H. Com. 1884-1900)

The line drawing from the **Illustrated Directory** of the south side of Market Street, at the Ferry Building corner, was made in 1894 just before construction of the new Ferry Building. (Plate 30). The three-story Central Pacific Lodging House on the corner was the tallest structure around. The artist for the business directory has made sure that everyone can read the names of the Ensign Saloon, the Alameda Cafe (one of the waterfront's oldest dining places in the 1880's), as well as L. Foard, a well-known ship chandler, N. E. Thompson's Drugstore, at the corner of Steuart and Howard, the favorite old-fashioned drugstore of the South of Market Boys' recollections.

As the numbers of commuters increased, the Ferry Building plaza became increasingly lively and the sheer numbers of passengers attracted

heavy advertising, as can be seen in Plate 31. We are looking at the north end of the old temporary Ferry Building. The C-3 alignment passes just under the busy scene of horse cars, cable cars, and drays. Teams of horses with carriages are drawn up under the sign for "World Beaters for Overcoats—Chicago Clothing Company." Small boys with packages tear across the intersection between the wagons and drays that maneuver away from car 282, bound for McAllister and Fulton. The Hayes Street, Castro, and Haight Street cars pull out from under the Enterprise Brewing Company's ad for "Standard, Pilsener & Bohemian Lager." The ever-popular appeal of the pioneers is used to promote "Days of '49" whiskey. Varney bicycles, Pet Cigarettes, Pat Rooney Cigars, General Arthur Cigars, and Admiral Cigarettes cover the roofs, billboards, and walls to assault the commuters.

J. D. Spreckels was awarded the contract for the cement for the foundation of the new Ferry Building on December 4, 1894. Its steel skeleton can be dimly seen in Plate 26, and the building that we see today can be found in Plate 22. It was a big construction job; East Street was repaved, sheds were constructed over the aprons of the ferry slips, hydraulic hoists were installed on the slips, and the approaches from all sides were rebuilt. The construction was delayed with continuous litigation from contractors who, for example, substituted Colusa sandstone for Oregon gray stone. Very little actual construction of the building got under way until July 1, 1896. (H. Com. 1894-96: 30-31) The new Ferry Building was officially opened July 11, 1898. The Harbor Commission waxed eloquent. "That the necessities of the port were such as to require a stately passenger depot at the gateway to the 'Metropolis of the Pacific' is a fact universally conceded. The building just completed, in point of architecture, workmanship, and general grandeur, compares favorably with any structure dedicated to similar use, either in this country or in Europe. Through its magnificent corridors, arcades, and waiting-rooms will pass the tourist from abroad, with whom first impressions are the most lasting, and from the splendor surrounding the entrance leading him within the portals of the 'City by the Golden Gate' will he judge of the enterprise and progressiveness of our people, and will, therefore, inspire him to

Plate 31: Temporary Ferry Building, Foot of Market, ca. 1896 . . . A temporary terminal on top of the just-completed Seawall Section 8B provided room enough, and a guaranteed audience of commuters, for the ad-men of the day. (S. F. Maritime Museum)

Plate 30: The Illustrated Directory View of the Ferry Terminal in 1895 . . .

Ferry Bldg 1 7 9–11 17

SION AND FERRY LINES — EAST ST. — MARKET ST.—SOUTH SIDE — STEAM

RCEL DEPOSITORY, Ferry Bldg
Porter & Street Proprietors
General Stores Depot, etc.

1. **Market Street. ENSIGN SALOON,**
C. Schwartz, R. Roslag, A. Mayer, Props
5. **THE C. P. LODGING HOUSE,**
N. B. Thayer, Proprietor
7. **"ALAMEDA CAFE,"** Coffee and Lunch
Jacob Peterson, Proprietor
7. **"ALAMEDA EXCHANGE,"** Saloon,
Peter Harder, Proprietor
9-11. **L. FOARD,** Ship Chandler and Naval Stores
17. **MARINE DRUG STORE,**
W. S. Thompson, Druggist

investigate the resources of our great commonwealth." (H. Com. 1896-98: 10)

Howard Homes, the chief engineer, gave the statistic that "To the top of the flagstaff ball is 275 feet." Adding up the cubic yards of cement used in constructing the building, he found the total weight of the Ferry Building to be 112,000,000 pounds. For this the state had issued bonds for $600,000. No one doubted the wisdom of the investment. (Ibid. 11)

East Street: Market to Jackson (Sanborn Map Section Q)

Across Market Street, in front of the Ferry Building, was the triangular tip of the block formed by Sacramento Street converging with Market. In 1887, this site was occupied by **Coffin & Hendry**, ship chandlers. J. W. Coffin was a ship chandler on East Street between Washington and Merchant as early as 1868. By 1879 he had taken on Charles J. Hendry as a partner at this Market Street address. They were at this busy Market Street corner up through 1891. The firm of C. J. Hendry remains today as San Francisco's leading ship chandler, but not at this Market Street address.

Ship chandlers found this area a lucrative business location for their blocks and chain, sisterhooks and marlinspikes, deadeyes, and capstan-bars, and all variety of small stores that might be on a skipper's shopping list. As early as 1857 the ship chandlers clustered at the foot of Market—George M. Josselyn, Smith & Company, and I. Burns. In this same block, through the years, were J. C. Freese, A. Foard, and A. W. Crawford. Plate 32 may have been taken as early as 1864, when A. W. Crawford started in business at 27-29 Market, "three doors down from Steuart." Anchors, a whaleboat, a nest of dories, wire rope, and chain are the wares spread out on the planked edge of Market Street as the owner, perhaps in front by the dories, discusses his new business venture with a friend in a silk top hat of the early 60's. The block and tackle was built out from the overhead sail loft for hoisting large sails and other

heavy gear.

Across Sacramento, the tip of Block 3 is formed by the meeting of Sacramento and Commercial on East Street. The **Bulkhead Saloon** was a well-known waterfront watering spot in the 1880's, when its proximity to the Ferry Building was recalled by Wheelan: "The Ferry Building was a long one-story wooden building and along the eaves bore the names of various cities—New York, Chicago, Denver, etc. In front of the building was a large wooden tower, where hung a great bell, which rang five minutes before the Oakland boat started. When the bell sounded you could observe many prominent citizens hastily leaving the various refreshment places that dotted the waterfront in a hurried manner to catch the boat. Across the street was the famous 'Bulkhead Saloon' and a nearby restaurant, where the boys drank huge cups of coffee in ironstone china cups and devoured huge, greasy jelly doughnuts. All for a dime." (Wheelan, May 1926: 24)

Next door to the Bulkhead Saloon was the **Rotger & Bischoff Candy Factory**, the perfect place for the last-minute purchase by the homebound commuter. Edward Rotger and Henry Bischoff were in this prime location on East Street as early as 1879, and their "candy butchers" worked the boats and the East Bay trains. Plate 33 shows the smart delivery buggies drawn up in front of the candy factory while the candy cooks pose on the balcony with bowls and spoons and trays of candy for the trade. Between the buggies the camera catches the blur of a fast moving small boy as he walks past the Gallagher's Oakland and San Francisco Express, where you could send a trunk across the bay for 50¢. The candy factory operated here up until the turn of the century. By 1905 there were club rooms, lodgings, and a restaurant, none of which survived the 1906 fire.

Crossing Commercial Street on East Street, the short block to the north (300 block of East) was elbow-to-elbow saloons in 1887. Saloonkeepers' nationalities were eclectic: Maas, Webber, Leydecker, Winter, Brown, Wrede, Ward, Ryan, Bredhoff, Bullwinkel, Fassier, and Anagnostopulos were all in business in this one block. If the owners changed, the business remained brisk up through the early 1900's. After the 1906 disaster the block was rebuilt with brick in back of the frame fronts and the business of the day remained the same. Small hotels and

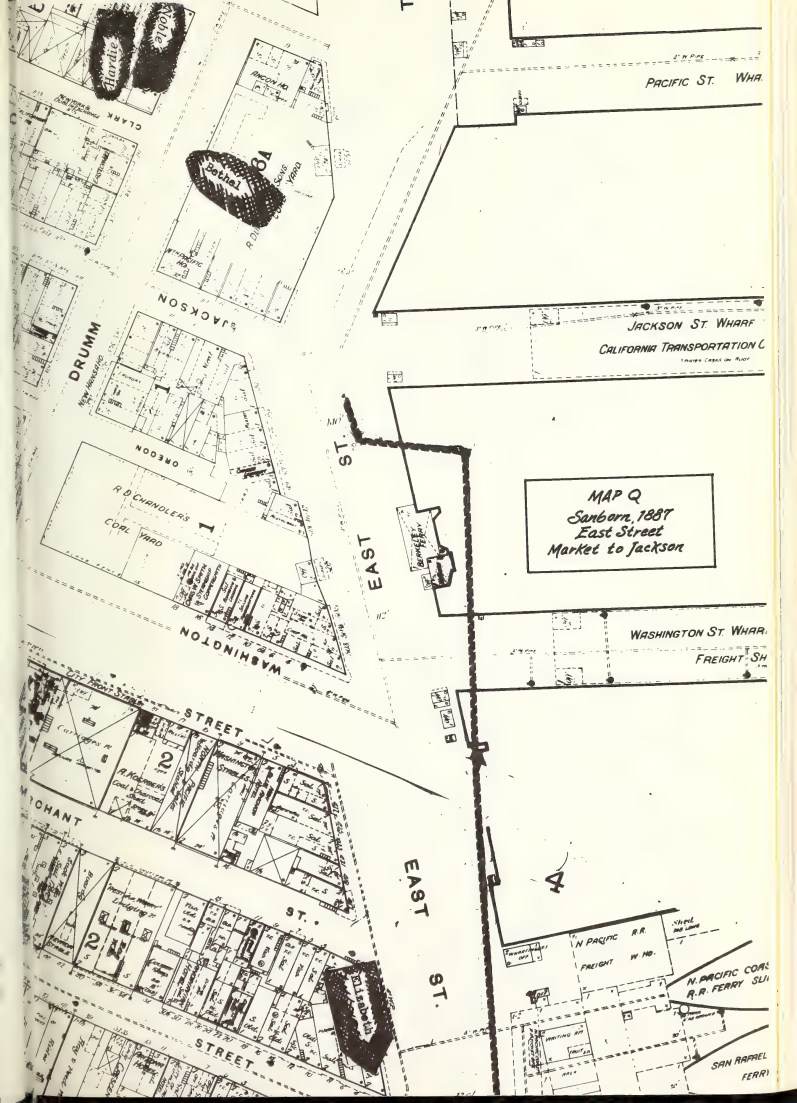
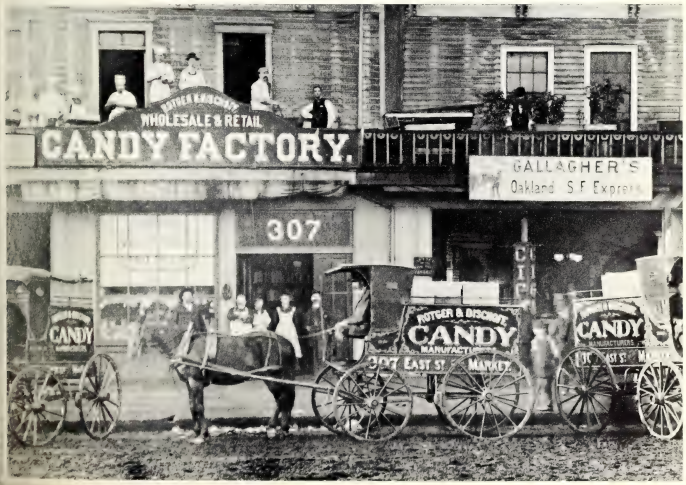

MAP Q
Sanborn, 1887
East Street
Market to Jackson
EAST ST.
JACKSON
DRUMM
WASHINGTON
STREET
PACIFIC ST. WHA
JACKSON ST. WHARF
CALIFORNIA TRANSPORTATION C
WASHINGTON ST. WHAR
FREIGHT SH
N. PACIFIC COAS
R.R. FERRY SLI
SAN RAFAEL
FERR
R.R.
FREIGHT
W. HO.
CLARK
OREGON
CORL YARD
R.R.

Plate 32: **Crawford's Ship Chandlery, Market Next to Steuart, ca. 1868 . . .** Here a captain could shop for anything from a dory to an anchor at a time when 27-29 Market was still planked over piles. (S. F. Maritime Museum)

Plate 33: **The Candy Factory on East Street, ca. 1879 . . .** The factory near the ferry landing was entirely convenient to the "candy butchers" who provided sustenance to commuters and rail travelers east. (California Historical Society)



lodging houses lay behind this waterfront saloon strip--The Portuguese House, North German Hotel, Scandinavian Hotel, and the "Rest-and-Weary-Lodgings." Emergency Hospital #14 was added on East Street in 1912; the police station was around on Drumm, and their horses were kept in stables nearby.

Across Clay Street on East, in 1887, the 400 block on East Street repeated the pattern to the north. Saloons faced on East Street and "furnished rooms" were back on Clay. The one- and two-story frame buildings were marked "old" by 1887. Waterfront saloon business across from the San Rafael and Tiburon Ferry Slip and the North Pacific Coast Railroad Ferry Slip continued up through 1905. After the earthquake a brick lodging house covered this same waterfront block. Even then the notes on the 1918 Sanborn Maps list the tenants on the street floor as "Saloon, restaurant, barber, saloon, pawn broker, and saloon."

East Street, from Washington to Jackson, was hardly different from the blocks to the south. Opposite the Berkeley Ferry Slip were saloon, chop houses, a Chinese laundry, and still more saloons. In 1887 these were all one- and two-story frame structures. These waterfront establishments backed up on **R. C. Chandler's Coal Yard** and **Charles Smith's** steamship coppersmithy.

Richard D. Chandler was the coal and iron agent for the East Wellington Coal Company in 1887. He had started in business in San Francisco as a clerk for the California Steam Navigation Company's coal yard in 1865. By 1868 he had his own coal yard at 118 Pacific. By 1883 he had moved to this East Street site where he stayed up through 1907. His company's offices were at 507-509 East Street, with scales for weighing coal right out in the street. The coal yard itself stretched back over 200 feet to Drumm Street. In 1887, Block 1 (between Washington and Jackson), was partially divided by Oregon Street, which was cut short of the waterfront by a saloon and restaurant. By 1912, R. D. Chandler's coal yard had been replaced by a brick building that housed a tent and awning factory. The 1918 Sanborn Insurance Maps list the tenants of the brick building as a saloon, tailor, barber, restaurant, saloon, shoes, saloon, etc.

Charles W. Smith, a coppersmith, shared the coal yard with Chandler. His steamship coppersmithy was at 16 Washington from 1885 up through 1918. After the 1906 fire he rebuilt his shop and covered it with iron. The "copper works" was still in operation in 1918 at this location.

The north half of Block I along East Street consisted of more side-by-side waterfront saloons and restaurants, interrupted only by a Chinese laundry. In 1887, all of these structures were frame one- and two-story buildings. They did not survive the 1906 disaster and were replaced by brick buildings. The Colchester lodging house occupied much of the second story in 1918 while the street occupants continued to supply the drinking and eating needs of the waterfront.

EMBARCADERO SOUTH . . . 1919 to 1977

By 1919 the days of the sailing ships were already a topic for nostalgia. World War I saw the practical end of the use of sail in "the general trades." The captains of the sailing vessels turned to the newer technology of steam. The character of the San Francisco waterfront changed as heavier industry continued to ebb further south to Hunters Point and to the Potrero, or across the bay to Oakland. The sailor's boarding houses that were rebuilt after the earthquake and fire stayed because property values were so low, especially during the depression of the 30's, that there was no incentive to replace them. The great waterfront strike of 1934 left a grim memory at Howard and Steuart. Men were being replaced by machines, and the inevitable cruelty of the process found direct expression here along the C-3 alignment. What had seemed slightly seedy in 1919 got worse by 1940.

World War II brought a kind of prosperity to waterfront industry--at least there was activity, but it tended to center in already heavily industrialized centers of Oakland and the Hunters Point area. The opening of two bridges across the bay meant that by 1940 the big ferry commute business was as good as gone.

The Ferry Building became a beloved anachronism waiting for the final humiliation—The Embarcadero Freeway. Built over citizens' protests in the 1960's, it became a concrete octopus that dominated the landscape. Truncated by outraged citizens, the freeway today sits as a sawed-off monument to bureacratic inertia, **i.e.,** "Once in motion the highway

department cannot come to a stop."

What remains today of historic San Francisco along the C-3 alignment? To the south, the **Oriental Warehouse,** built by the Pacific Mail Steamship Company in 1867, is a handsome and substantial brick warehouse that has been in continuous use since its origin. As such, it is a unique and valuable part of San Francisco's history, particularly so because of its close association with Far Eastern trade. The imposing brick structure, with its basalt block sideyard still intact, lies about 250 feet from the C-2 alignment, at the corner of Brannan and First Streets. The sewer excavation will have no adverse effect on this building. The Oriental Warehouse should be a candidate for landmark status with the City and County of San Francisco. The building is presently used as a warehouse by the Southern Pacific.

Moving further north on the C-3 alignment, **Hathaway's Warehouse,** at the corner of Harrison and Spear, presents a partial version of its 1900 appearance, seen in Plate 21. Hathaway's origins are not as well documented as the Oriental's beginnings. However, based on the research of Karl and Jean Kortum, it would seem likely that it was built about the same time as the Oriental. We have traced its building and rebuilding in earlier sections of this report. We are not certain how much of the original, one-story building remains intact. As it stands, it appears to be a handsome warehouse of the 1890's. For that reason it would seem to be less likely to become a landmark in this area than the Oriental. However, the proximity of other handsome brick warehouses, mostly one- and two-story buildings from the early 1900's, makes it part of any valuable reconstruction and restoration of this area. The building is presently used for a variety of business activities that in no way affect its outside structure, and the owners have indicated an interest in restoration. Hathaway's is about 200 feet from the C-3 alignment which will in no way impact this brick building.

The block between Howard and Mission on the Embarcadero is the underbelly of the freeway, which curves to within eight feet of the YMCA Embarcadero Hotel. This tower of threadbare respectability is fenced with two layers of freeway in continuous use, so that windows that

formerly looked out over the bay now must be kept closed to shut out exhaust fumes and noise. The YMCA has decided against removal of what is a reasonably handsome and sound structure built on the site of its former headquarters of the early 1900's. Perhaps it will indeed outlast the freeway. On either side of the YMCA hotel are two- and three-story lodging houses from the 1920's with saloons on The Embarcadero, just as with their predecessors on East Street. Only the names from the past haunt the present, "The Admiral," "Harbor House," and the like. An old painted sign on the side of one of these lodging houses offers "Rooms 35¢ a night—and up, or $2.00 a week, and up. With steam heat." A tattoo artist has moved in downstairs and appears to be the most prosperous tenant on the street.

On the corner of Mission and The Embarcadero is the **Audiffred Building**, a three-story brick structure with an unusual mansard roof. This is the site that was untouched by the 1906 earthquake and fire. We can see this building in Plate 27 (taken about 1898). The Audiffred Building has been declared a landmark by the City and County of San Francisco. The C-3 alignment passes over 150 feet to the east, close to the present Ferry Building, and will not impact this building.

The C-3 alignment passes directly in front of the **Ferry Building.** The excavation will be about 12 feet below city grade at this point to accommodate a three-foot pipe. There will be no adverse effect on the Ferry Building as a result.

RECOMMENDATIONS FOR ARCHAEOLOGICAL TESTING AND MONITORING ALONG THE C-3 ALIGNMENT

An in-depth historical survey and archaeological assessment of archival materials describing the evolution of that part of the San Francisco waterfront on or near the C-3 alignment, in addition to a study of existing geological profiles, has enabled the authors to reach a relatively comprehensive understanding of the nature of the structures that have existed in the area during the past century and a quarter as well as the various uses to which they and associated artifacts were put. As a result of in-depth archival research, the authors feel themselves to be in an authoritative position to make determinations regarding the nature of the cultural materials that are likely to be (or not to be) encountered along the proposed route of the C-3 alignment.

Archival research has shown that there is virtually no possibility of encountering any cultural materials from the prehistoric, Spanish or Mexican periods (from approximately 2000 B.C. to 1849 A.D.) since during these years the entirety of the C-3 alignment lay submerged beneath many feet of water. During the Gold Rush and subsequent periods of the nineteenth century, a great deal of bustling cultural activity took place along the San Francisco waterfront, including that portion on or near the present course of the C-3 alignment. Piers and buildings were built and as rapidly torn down. Ships were sunk in various places along the entire length of the waterfront. The bay was filled, changing the contours of the shoreline. Business boomed. However, the probability

of encountering any significant concentrations of these materials that may have been deposited during or after the gold rush is reduced by a number of factors. First, the northern half of the C-3 alignment (where any sunken ships would most likely be located) from Jackson to Howard Streets along The Embarcadero will be excavated to a depth that is almost certainly too shallow to reach any concentrations of cultural materials that are located beneath the present ground surface. Second, much of the C-3 alignment on or near the old waterfront was subjected to repeated dredging during the latter half of the nineteenth century. This dredging activity would greatly lessen the possibility of encountering any significant concentrations of stratigraphically coherent cultural materials.

Preconstruction Testing Procedures: As mentioned above, there is little possibility of encountering significant concentrations of cultural materials at any point along the C-3 alignment. Yet, there are several spots of some interest and prudence dictates that a program of preconstruction testing for significant cultural materials be undertaken. This program can best be accomplished by the placement of a series of mechanical test borings along specific points of the alignment. These borings shall be of some 12 inches in diameter. The locations of these test borings shall be determined by the historical archaeologist selected by the City and County of San Francisco (hereafter known as the Principal Investigator).

With reference to the C-3 alignment, it is proposed that nine (9) 12" mechanical test borings be placed. As mentioned earlier in the text, Captain Lawson sank two ships near the proposed route of the C-3 alignment. These ships, the **Elizabeth** and the **Rome** (or **Roma**), according to the results of an in-depth archival study, are almost certainly not along the route of the C-3 alignment and will not be impacted by the construction of the proposed sewer line. However, for the sake of prudence and also in recognition of the great amount of current interest (among both scholars and laymen) in gold rush ships, it is proposed that several borings be placed along the alignment before the beginning of construction in the locations where these ships would most likely be encountered.

It is proposed that two (2) 12" borings be placed along the alignment between Merchant and Clay Streets. If the ship **Elizabeth** is to be found it will be in this locality. The first boring should be placed some fifty feet to the south of Merchant Street and the second approximately one hundred feet south of the first boring.

The second gold rush ship, the **Rome** (or **Roma**), was reputedly sunk near the intersection of the alignment and Market Street. Therefore, it is proposed that one (1) 12" boring be placed near this intersection to determine if the remains of this vessel are or are not present at the present time.

Much of the fill along Steuart Street is of unknown origin and may possibly contain artifacts dating as far back as the gold rush. It is therefore proposed that three (3) 12" borings be placed along the C-3 alignment on Steuart Street between Howard Street and a point some 200 feet south of Folsom Street. These borings shall be evenly spaced along this portion of the alignment.

A site of some interest is the site of the Pacific Mail Dock at the intersection of First Street and The Embarcadero. There is some possibility that nineteenth century artifacts were deposited in this area. Therefore it is proposed that two (2) 12" borings be placed fifty feet from one another at this point along the alignment where First Street intersects The Embarcadero.

Finally, it is proposed that one (1) 12" boring be placed at the southern end of the C-3 alignment at the intersection of King Street and The Embarcadero. The excavation for the sewer along the C-3 shall be the deepest at this point (in fact, it is only at this point that the C-3 excavations reach into the bay mud). If any deeply buried artifacts are to be encountered anywhere along the C-3 alignment, they are most likely to be found here.

Based on the evidence unearthed by this initial set of nine (9) 12" test borings, the Principal Investigator shall submit a written report of his findings to the appropriate agencies within 14 working days of the cessation of fieldwork. If, according to the evidence, additional testing is warranted, five (5) additional 24" test borings shall be authorized and

implemented in locations specified by the Principal Investigator. The specific details of this procedure have been described at length in both the N-3 and N-5 cultural resources reports and need not be repeated here at length.

Procedures for archaeological monitoring during the course of construction on the C-3 contract area are identical to those outlined in the C-2 contract covering the King Street area, and for that reason, they are not reprinted here.

Appendix I

The Stevedore on San Francisco Waterfront, Ca. 1900 . . . Recollections of Senator Jack Maloney, from the South of Market Journal, September, 1933.

Stevedores are a large body of men who are ninety-nine percent driftwood from all walks of life. When a young man meets disappointment and finds himself out of work he naturally migrates to The Embarcadero as visions of other shores beckon him, and he dreams of a new start in foreign cities. While passing one of the many docks that dot the water's edge a gang foreman will halt him and ask, "Want a job? Come on in; it's easy; and if you don't like it you can check out any time." Maybe it's hypnotism—who knows. Unconsciously he walks in and is told to go with a certain man. This is his partner, who is delegated to teach him the ropes and the tricks of the business.

Oh! that first hour! Eighteen hundred to two thousand pounds to a load. One man shoves while the other pushes. The new man is ready to quit, but the partner encourages him, so he stays with it. He is nearly exhausted and ready to drop in his tracks, but his partner urges him on and he plugs along until noon time. The new man is told that he has earned three dollars and sixty cents—ninety cents an hour—as much as he made all day in the job he just left. This spurs him on. He stays with it a week and with overtime he has earned seventy-five dollars. Big money! He is now converted!

Hickory shirts, Boss of the Road jeans, a couple of hooks (sack and cargo) replace the white shirt and collar, the pen and pencil, and the beginner is hooked—hooked like a fish. Stevedoring is now the chosen profession. After five years of longshoring one is a master craftsman. He can do anything worth mentioning. He is a specialist. He depends upon his own ability and never asks outside aid in any job he is set to do.

There are three classes of stevedores--those that work in the ship's hold, the dock men, and the men on deck. The men in the hold are the big fellows; the dock gang are young and fast; while the deck men are the men that rig the ship and do the watching.

Jitneys are replacing the tugging and pulling on the docks and big boards, called aeroplanes, are used to put the cargo on in the hold. The loads are built in the hatchways and lifted on to these aeroplanes, so that, even if it is a time-saver, it is harder on the men. Hours are uncertain. One never knows when one will work, nor when one will be home. The ship's schedule comes first. She must leave on time, and this is one of the drawbacks to the life of a "Husky Stevedore."

Discharging a ship requires skill and knowledge. The foreman must see that the booms set in the proper position. There are two booms, one called the "midship," the other called the "yardarm." The midship boom is the one that is lowered or topped to where it will be easiest and quickest to get the cargo out of the ship's hatch; the yardarm is the one that reaches over the dock far enough to make certain that the cargo will swing far enough out so that it can be landed safely on the trucks without any of it falling into the bay.

Alongside of the ship when a hatch is working there is a large net, called a saveall, to catch anything dropped from a load coming from the ship.

The men in the hold tug and pull and lift all day making up their loads. They work in pairs, and it is surprising and interesting to watch the six men that constitute a hold gang, do their work. The quicker their load is made the better it is for each pair of men, as they do not send a load out ahead of their turn. If by chance some can't make up their load in time to meet the hook, it is just too bad for them, as it is considered a terrible disgrace to "let the hook hang," as it is expressed, and the next ship will find these two men absent from the gang.

The load goes from the hold to two men on the deck who are waiting for it. Irrespective of the weight of the load, be it fifteen hundred or two thousand pounds, the two men must run it to its respective pile. One pushes, the other shoves, and if there isn't cooperation in this

you can soon expect a fight. The men get rid of their load in the quickest possible time so that they can get back in time to "meet the hook," as, on the dock, like in the hold, it is a terrible thing to "let the hook hang."

A hatch tender is a man who directs the winch drivers. He has a system of hand signals which tells the winchmen when to go ahead, stop, raise or lower the load. He is responsible for the safety of the men, and bad loads, and he must be a fast thinker in emergencies.

Winchmen are cool men and quick thinkers and have to have their eyes and ears open all the time. With experience a winch driver can tell how much wire he has out and if anything is wrong they sense it immediately.

Gang foremen can be compared to an umpire in a ball game. Foremen are picked men of many years experience. During the foreman's working as a stevedore he has many friendships, so when he first lands the job as boss his grief begins. His gang consists of fifteen to twenty men. When a ship comes in he must pick these men from about two to three hundred of his friends. To the chosen fifteen he is okay, but to the rest he is high-hat, a no-good-slob, etc., etc. This is one time in a foreman's life when he really needs a friend. It is still harder on him when one of his gang fails to show up. Then he has to go out and pick one from this mob that he has worked alongside of and known for years. What a job! Then there are the letter men to contend with. These men are sent from higher-up with a letter to go to work, and, in most cases, their experience is nil, yet the foreman must take them in place of one of his steady men.

Stevedoring, like everything else, is changing. Machinery is taking the place of man-power and it won't be long before all the old timers are gone from the waterfront. The good old days will never be revived, and my advice to all young men is to "stay away from the waterfront." Plenty of hard work when one is young and peppy, and the alms house in your old age.

Appendix II

Recruiting Lodgers for the Sailor's Boarding Houses . . . James Roxburgh recalls the waterfront in the 1870's and '80's for the South of Market Journal, July, 1933

In the seventies and eighties sailing vessels entering the Golden Gate were met by boatmen far out to sea seeking trade for the boss stevedore, ship chandler, butcher or tugboat company. When the ship would enter the harbor the boarding house masters would swarm out to the ship and try to get aboard, but they would have to wait for the captain's permission. There were two policemen on board to enforce this order. Once the boarding master got aboard he soon got among the sailors and promised them everything if they would come and board with him—a job in the country or a job in the mint—in fact anything.

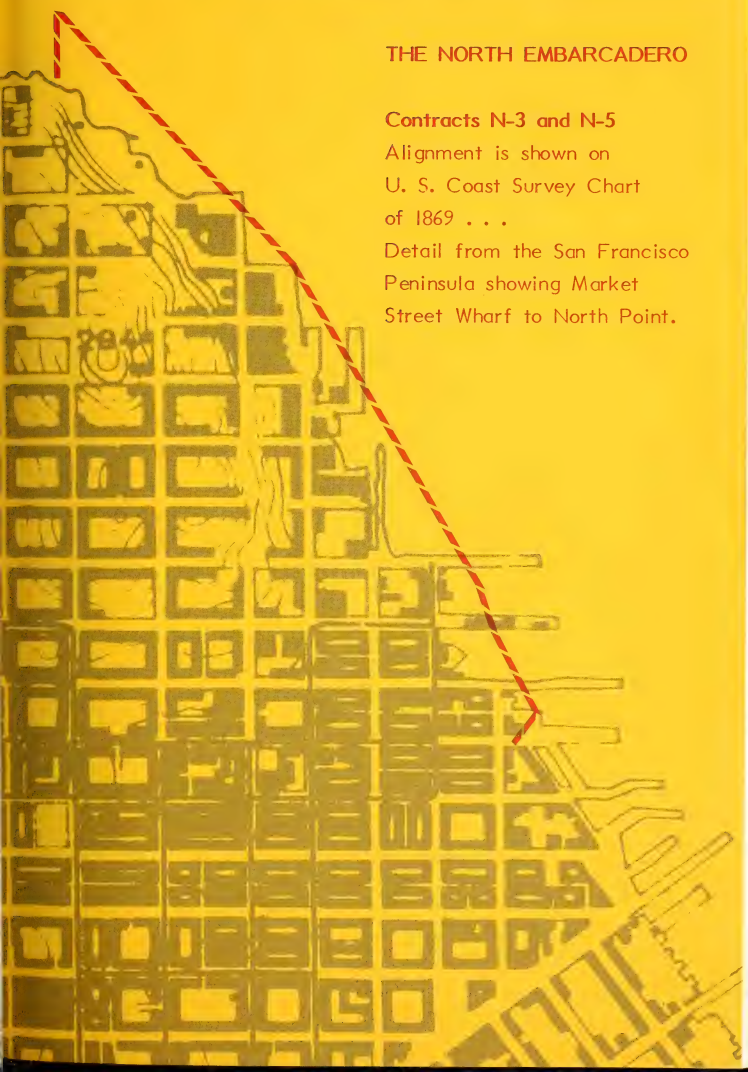
The boarding house masters always carried a bottle of chain lightning (whiskey). One or two drinks was all they needed. Then they would leave their wages—in fact a year's pay—to the boarding house masters and perhaps the next day they would be shipped to Liverpool or some other foreign port.

There was a great demand for sailors. There were many ships in the bay waiting for crews. Some of the ships paid as high as $200 blood money as well as three or four months board money for a crew. Thus the boarding house masters did a land office business. If they did not have sailors enough for a crew they would fill in with 'greenhorns' who had been drilled in what to say to the captain. There would be four or five sailors and the rest 'greenhorns.' This made up the crew. Their outfit consisted of a 'donkey breakfast' (straw mattress), suit of oilskins and a pair of rubber boots. The boarding house master then bid them goodbye, and that was the last the sailor would see of the boarding house master.

TABULATION OF DATA ON SAN FRANCISCO SEAWALL CONSTRUCTION

Section	Started	Completed	Length in Feet	From	To
B	Sept. 22, 1890	May 22, 1893	1,000	Foot of Powell	Foot of Taylor
A	Dec. 18, 1879	Jan. 24, 1881	561	West Line of Sec. 1	West Line of Powell
1	Sept. 13, 1878	May 15, 1880	1,000	East Line of Kearny	1,000 Feet West
2	Nov. 5, 1878	Apr. 30, 1880	1,000	East Line of Kearny	1,000 Feet East
3	Jan. 25, 1879	Apr. 8, 1881	1,000	Between Montgomery & Sansome	Battery
4	Mar. 27, 1880	Aug. 12, 1881	1,000	Battery	Between Front & Davis
5	Feb. 20, 1884	Mar. 13, 1885	1,000	Between Front & Davis	Drumm
6	Jan. 6, 1885	Apr. 3, 1886	800	Drumm	Pacific
7	May 12, 1887	May 31, 1889	1,000	Pacific	Clay
8a	Mar. 5, 1891	Dec. 13, 1892	389.5	Center Line of Clay	North End of Section 8b
8b	Oct. 25, 1888	June 30, 1890	450	South End of Section 8a	Foot of Mission
8	Dec. 6, 1909	Mar. 10, 1910	300	Foot of Mission	Between Mission & Howard
9a	Jan. 4, 1913	Nov. 27, 1914	990	End of Section 8, Foot of Mission	Foot of Folsom
9b	Jan. 4, 1913	May 6, 1915	780	Foot of Folsom	Foot of Harrison
9	Mar. 29, 1910	Oct. 13, 1910	1,000	Foot of Harrison	Between Bryant & Brannan
10	Aug. 29, 1909	Sept. 7, 1911	485	Point Between Bryant & Brannan	Foot of Main
11a	Nov. 25, 1908 May 16, 1912	Oct. 28, 1914 Jan. 2, 1914	280	Foot of Main	Foot of Beale
11	Feb. 22, 1909	Oct. 11, 1909	353	Foot of Beale	Between Brannan & Townsend
12	June 13, 1907	June 4, 1908	1,000	Between Brannan & Townsend	Foot of King
13	Dec. 30, 1903	Apr. 27, 1905	600	Foot of King	South of Berry
13a	Feb. 9, 1922	Jan. 20, 1924			

[Reproduced from Gerald Dow's Bay Fill in San Francisco: A History of Change, M. A. Thesis, 1973.]



THE NORTH EMBARCADERO

Contracts N-3 and N-5

Alignment is shown on U. S. Coast Survey Chart of 1869 . . .

Detail from the San Francisco Peninsula showing Market Street Wharf to North Point.

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SCOPE, OBJECTIVE AND METHOD

The objective and directions for the study of the N-3 and N-5 contract areas follow the outline and discussion in the introductory statement of the C-1 and C-4, or Channel Street section of this report. To the extent that this report differed from the earlier contract areas it was primarily in depth of study required for two research areas: (1) Some of San Francisco's north waterfront warehouse complex dated back to gold rush times and as a result has been a subject of great interest to the Landmark Preservation Advisory Board of San Francisco; (2) among the large number of gold rush vessels known to have been encompassed by the filling of the San Francisco waterfront, seven have been identified as lying about 150-200 feet west of the N-3 alignment.

Regarding the north waterfront wharves and warehouses we were fortunate to have the research assistance of Jean Kortum, a member of the Landmark Preservation Advisory Board of San Francisco. Her painstaking reconstruction of gold rush warehouses and wharves was an invaluable aid in determining the possibility of any impact on a cultural resource from this early period. Mrs. Peter Platt, the chairman of the San Francisco Landmark Preservation Advisory Board, served as critical reader regarding extant structures of historic importance on the north waterfront.

Harlan Soeten, curator of the San Francisco Maritime Museum, encouraged us in the use of his map of sunken gold rush vessels and store ships derived in part from the earlier research efforts of Al Harmon, who

was, until his death, the librarian of the research library of the Maritime Museum. Both Mr. Soeten and Karl Kortum, the director of the San Francisco Maritime Museum, were tireless in their efforts to help us trace the details of the probable whereabouts of the sunken hulks of the **Noble**, the **Hardy**, the **Inez**, the **Bethel**, the **LeBaron**, the **Palmyra**, and the **Philip Hone**. The details of Captain Fred Lawson's ship-sinking activities have been correlated with sounding maps, weather reports, and daguerreian views taken in the times, as well as the **Harbor Commission Biennial Reports** of later years regarding dredging operations in and around the N-3 alignment.

Scope of the Construction and Excavation: The N-3 sewer contract involves a slurry-wall and open-cut excavation for the most part 15 feet wide and with an invert culvert level ranging from 38.16 feet below city base at its northern (North Point Street) end to 16 feet below city base at the southern (Jackson Street) end. In referring to historic maps with soundings, it must be kept in mind that the city base level is 11.67 feet above the standard mean low-tide level of the old Coast Survey.

The alignment runs down the west side of The Embarcadero from the intersection of North Point and Kearny Streets to Jackson Street. For purposes of visual reference, the alignment can be described as follows: (1) from the centerline of North Point Street it runs southward along The Embarcadero about 20 feet to the east (left, as one moves southward) of the Belt Line railroad tracks until (2) at Bay Street it jogs westwards, so as to run under the most westerly track; (3) at Sansome it jogs back to the east, to the easterly side of the existing tracks, and it follows this line (east of the existing curb by about 20 feet to centerline of the sewer) to a point midway between Vallejo and Broadway; at this point (4) it again jogs slightly (about 20 feet) to the westward; (5) finally, about 100 feet north of Jackson Street, it turns abruptly (about 70 degrees) to the west, ending about 20 feet from the curb line of Jackson and The Embarcadero. For exact reference attention is called to the 200'-to-the-inch maps and overlays.

At no point does this alignment impact any existing building; at

some points it does impact existing tracks of the Belt Line Railroad.

The N-5 contract involves the construction of a pump station and associated sewer structures generally along the line of Kearny Street between North Point and Bay Streets and on the adjacent land to the west. Along Kearny Street the deep excavation (up to 40 feet below city base) will include parts of both the sewer itself and the pump station facilities.

From the west curb line of Kearny Street new structures will be erected, forming part of the existing sewage treatment facility on that location. Excavation will be as much as 50 feet deep. No existing buildings will be impacted by this construction.

THE NORTH EMBARCADERO: SUMMARY . . . Historic Cultural Resources

Contract Areas: The N-3 contract of the North Shore Outfalls Project involves a sewer alignment running down the western side of the Embarcadero from North Point Street to Jackson Street. Included in this report is the area in and adjacent to Kearny Street between North Point and Bay Streets that comprises the North Shore Pump Station, contract N-5 of this project.

Prehistoric, Spanish, Mexican, and Early American Periods (to 1848): The entire contract area was in deep water—12 to 30 feet or more—prior to the rapid extension of wharves from the gold rush city front in the early 1850's and the subsequent siltation of the waterfront and filling of the blocks of waterlots east of the natural shoreline. Any prehistoric materials ever deposited on the alignment would be things lost overside the reed watercraft of the native Indians. Any materials from the Spanish and Mexican periods and the American period up to the inauguration of a huge maritime commerce with the gold rush arrivals of 1849 would also be confined to things lost in the course of an infrequent maritime activity. No vessels of the period 1775-1848 are known to have been sunk anywhere near the N-3 alignment or N-5 pump station. It is highly unlikely that cultural materials of the prehistoric or colonial periods will be encountered anywhere in the construction.

Gold Rush Period (1849-1857): Of the wharves of the early gold rush period, only the Pacific Street Wharf had reached eastward to the N-3 alignment as of February, 1852. Later in that year, or the following year, the Broadway Wharf was extended to the alignment. By 1857 the Jackson, Pacific, Broadway, and Vallejo Wharves are seen to be transected by the alignment as we project it on the Coast Survey Chart of that year, as are the tips of the Lombard (North Point) and Greenwich Docks. Shaw's Wharf (at Filbert Street) and the India Dock (at Greenwich) came to within about 100 feet of the alignment. It is unlikely that any portions of these original structures will be encountered (with the possible exception of pilings at Jackson and Pacific Streets), for the piers were rebuilt at later dates when they variously succumbed to the ravages of shipworms.

The contract area from the north side of the Pacific Wharf to the North Point Docks berthing spaces, in the way of the alignment, was subject to periodic dredging in the 1860's and 1870's, and we may presume that the substantial amounts of random cultural materials that must have been deposited overside the wharves or ships along the alignment during this period would have been greatly disturbed and for the most part removed and dumped out into the channel.

Among the large number of gold rush vessels known to have been encompassed by the filling of the San Francisco waterfront, seven have been identified as lying about 150-200 feet west of the N-3 alignment as located in reminiscences published in the daily press in 1882 and 1890. Study of the recalled locations as plotted on contemporary and later maps and photographs reveals that it is very unlikely that any of these vessels that were sunk in 1850-1852 actually went down sufficiently to the eastward of their reported positions to be transected by the alignment. Four of the seven identified vessels were sunk between Pacific and Jackson Streets west of the alignment; study of the Coast Survey charts of 1859 and 1869 suggests that this portion of the alignment is the only place where the persistence of the hulk of a gold rush ship (either one of these or some other) would not necessarily have interfered with the use of active piers. In other words, any ship in any other location would have been in all probability removed as an obstruction. In particular, the south half of

the N-3 alignment between Pacific and Jackson is a possible location for the remains of a gold rush hulk, although it would appear that construction of the old seawall of 1867-68 would have previously impacted at least part of this area.

The City-Building Period (1858-1880): With regard to the N-3 alignment, the period from the furthest extension of the waterfront of gold rush times, as shown on the superbly detailed 1857 Coast Survey Chart, down to the building of the new seawall and The Embarcadero represents a coherent division of time. During this period the streets were extended to the official waterfront line of 1853, and by 1877 wharf structures appeared in every block of the alignment, from the Merchant's Dry Dock operation between North Point and Francisco Streets to the Jackson Street Wharf. The presence of random cultural materials lost or cast from wharves or ships is likely along parts of this alignment, although in many places dredging would have removed such materials from time to time or have resulted in a depth of water greater than the invert profile of the sewer excavation.

The alignment transects the 1877 wharves at Pacific, Broadway, Vallejo, Green, and Union, and "clips the corners" of the wharves or wharf-streets at Lombard and Battery, Chestnut and Sansome, and Francisco and Montgomery. It cuts diagonally through the block bounded in 1877 on the landward side by Battery and Filbert and on the bay side by wharves along the outer sides of Front and Greenwich. A birdseye view of that year, which portrays other features of the North Point area quite accurately, shows this block as partly filled in the way of the alignment. If the interpretation is correct, this is the only area other than the block between Pacific and Jackson Streets where the N-3 alignment transects fill placed before the building of the new seawall. It is possible that material containing cultural debris was used in filling. The fill would have gone in on top of debris from a wharf and slip complex of the mid-1870's that served bay and coastal schooners and the Italian fishing fleet.

The alignment transects the location of both the floating dry docks

of the Merchant's Dry Dock Co., together with associated pier structures, as seen on the 1877 Harbor Commissioner's map. The first of these dry docks began operation in 1867, they were removed when seawall construction preempted the area in 1879. Debris from ship repair and shipbuilding operations probably remains on this site above the invert profile level.

Late Nineteenth Century: The Seawall and the Modern City Front (1880's and Later): Between 1878 and 1889 the present seawall was built along the N-3 alignment, generally extending the city front (bulkhead line) and resulting in the building of new piers. The first sections were completed in August, 1881, to a point just short of Union Street; the next sections to the south (to Pacific) were completed in 1885; the final portion along the alignment (Pacific to Jackson) was undertaken in 1887 and finished within the next two years.

The seawall completion drastically reduces the possibility of recovery of substantial cultural materials from subsequent years, for at this time The Embarcadero was brought to grade along the N-3 alignment. The seawall itself, a structure of rock emplaced in a dredged trench and rising to city grade level, was fifty feet wide and lies eastward (along the Embarcadero) of the N-3 alignment. The sewer excavation will follow the 150 feet of the backfill that forms the major part of the Embarcadero foundation and that was part and parcel of the "seawall" as described by legislation and contract. Unless contracts for the fill were curtailed in practice and the roadway as completed was narrower than projected, all of the fill would have been deposited under speedy contract conditions and may be presumed to have come almost entirely from large deposits of immediately available material ranging from dredged bay mud to fill from Telegraph Hill or the sand hills to the north.

Photographic evidence shows that numerous water-filled holes existed back of the seawall roadway after its construction. The N-3 alignment may cross some of these pits if the planned width of the backfill for the Embarcadero were not up to full dimension. In such a case, it is possible that trash may be encountered dating from the 1880's.

A particular site for discovery of possible trash of the 1880's is in the N-5 excavation west of the line of Kearny Street. Prior to the construction of the seawall, the N-5 location was offshore and to the west of the Merchant's Dry Dock, and the probability of cultural remains of the previous periods is about zero. A panorama of 1883 (after the completion of the seawall in this area) shows Kearny Street graded, but a water-filled depression appears beyond the west side of the street. A contemporary painting of the general area shows a cartman dumping what appears to be trash into such a back-of-the-seawall depression.

Beyond the possibility of encountering trash used as fill at the N-5 site and the more remote chance of similar encounters on the N-3 alignment, the quantity of cultural remains that may exist subsequent to the completion dates of the seawall sections is limited to changing circumstances at the surface level. This could amount to throwaways or losses (broken bottles or coins) of the turn-of-the-century or later along the Belt Line right-of-way.

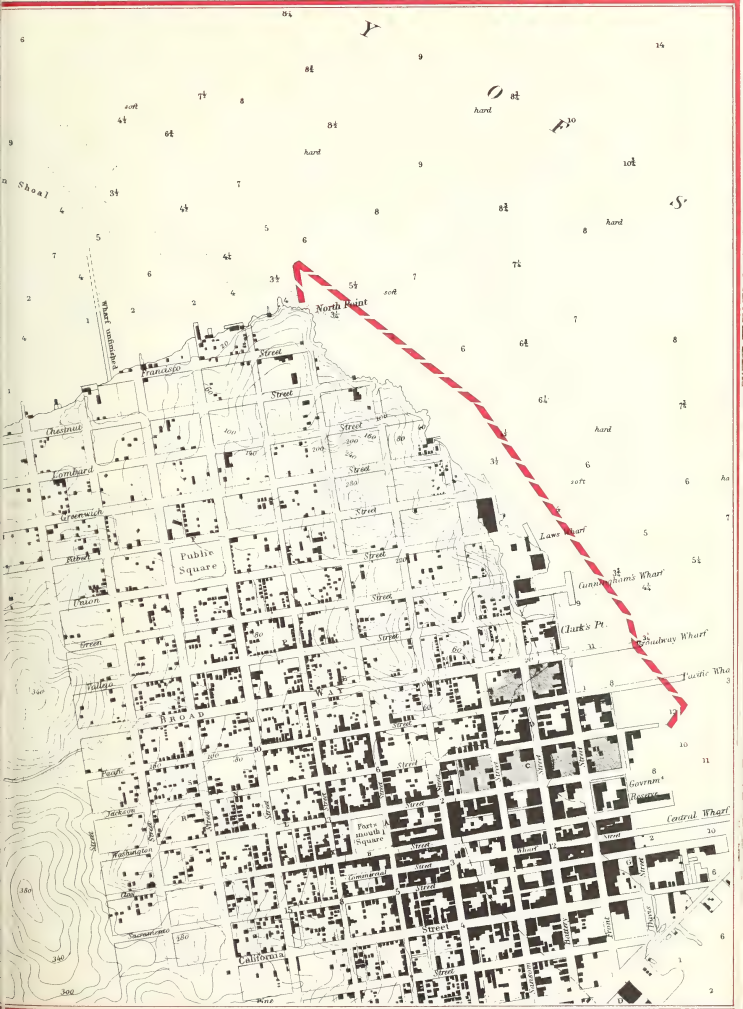
Conclusions: There can be no doubt that a great quantity of cultural materials of the sort that could be lost or discarded in the course of intensive maritime commercial activity must at one time or another have existed at or above the invert culvert grade of the proposed N-3 sewer contract. However, there are almost certainly no such materials from the prehistoric period or the historic period down to 1848. The possibility of encountering materials of this nature from the gold rush period (1849-1857) is low, as the result of dredging during the 1860's and 1870's. The closer one gets to the dates of the construction of the seawall-Embarcadero of 1879-1889 the higher is the likelihood of encountering random artifacts or debris.

From the completion dates of several seawall sections, there is little chance of encountering debris in any quantity or of any quality that would enhance historical knowledge in any degree. The best potential site for casual trash of the early 1880's is the N-5 contract area west of Kearny Street.

The possibility of encountering hulks of the early gold rush period

(or any other) is remote. The likeliest site is in the block between Pacific and Jackson. The value of any remains of such ships, from the standpoint of maritime or cultural history, would be slight. Remains would be badly deteriorated and probably of social value only as museum exhibits of parts or sections. However, the rarity of any such remains naturally suggests a lively interest in on-the-spot examination, recording of significant details, and preservation of remains that may be considered valuable by experts in the field.

Altogether, a historical analysis of the N-3 and N-5 contract areas shows no impact on any identifiable cultural resource that appears to be eligible for inclusion in the Natural Register of Historic Places. (Structures of historic interest that are near but not impacted by construction are mentioned in the body of the report.) By the more general standards of archaeology and historiography, we cannot determine any sites or probable remains of structures or materials that are apt to add to our knowledge of history, technological or cultural. However, it is quite possible that excavation in the course of construction may reveal artifacts or interest to collectors, antiquarians, or museum curators.



1- U.S. Coast Survey, 1853

GOLD RUSH PERIOD . . . 1848-1857

The Report on Cultural Resources for the C-3 (South Embarcadero) alignment contains the general background information as to the development of the Yerba Buena Cove waterfront during the gold rush years. We have seen that Central Wharf, an extension of Commercial Street, was the first of the piers built out to the North Shore and Channel Outfalls alignment. In the N-3 area, the Coast Survey chart of February, 1852, shows the Pacific Wharf extending beyond the alignment, while the Broadway Wharf lies a few feet short of it. The 1853 Coast Survey Chart (Map I) shows sufficient extension of the Broadway Wharf to place its outer end athwart the N-3 alignment. The Jackson Street Wharf, Cunningham's Wharf, Law's Wharf, and Griffing's Wharf did not extend to within 200 feet of the alignment at this date. Plate I shows the city and Yerba Buena Cove in mid-1850. Cunningham's Wharf is directly below Telegraph Hill in the left foreground, with two steamboats of the Sacramento-San Joaquin River trades alongside. The N3 and C-3 alignments run across the left-hand side of this view, at this early date well outside of the projecting piers. Plate 2 gives a surprisingly accurate aerial impression of the city front in mid-1852. This view can profitably be compared with Map I to show how the shipping still crowded the pierhead line—and also to show why sunken ships at those pierheads would have been unacceptable obstructions.

As the previous survey of the C-3 contract area of the South Embarcadero has shown, the chances of sunken hulks of gold rush ships

lying as far east as the present line of the Embarcadero are very low. The N-3 alignment as laid down on the Coast Survey Chart of 1853 (Map I) places the sewer excavation outside of the area in which storeships were entrapped by the advancing waterfront. Furthermore, in the area north of Green Street the sewer line runs well outside the three-fathom (18-foot) line of that date, through an area completely exposed to northerly gales. This is not a plausible site for the location of any floating warehouse. The area south of Green Street, from Cunningham's Wharf through the Jackson Street Wharf along the alignment was one of the active shipping operations, with large steamboats coming and going on a daily basis. In 1854 the steamers to Sacramento and Marysville, to Oakland and bay points used in the Jackson Wharf, the Pacific Wharf, the Broadway Wharf and Cunningham's Wharf. (Le Count & Strong 1852-1854: 177-179; Parker 1852: 24-26) The owners of these important and profitable wharves certainly did not permit their slips to be obstructed by sunken hulks.

However, since the possibility of the N-3 excavation encountering gold rush hulks is a matter of particular historical and archaeological interest, we will describe the location of seven ships that appear to have been sunk within 150 to 250 feet of the west side of the alignment. The probable location of these ships is indicated on Map I and also on the large scale Sanborn Maps (AA, CC, and DD). They can be divided into two groups, the three storeships north of Green Street, and the four ships scuttled by Captain Fred Lawson in the vicinity of Pacific and Drumm Streets.

The description of the circumstances and location of these possibly buried hulks is primarily derived from two sources. The first is three of the parts of a series of essays in the **Alta California** published between April and July of 1882, and titled "Reminiscences." A more descriptive title for the series would have been "Recollections of the Gold Rush Waterfront." The author is unknown, but it is apparent that he resided in San Francisco, perhaps not since the gold rush, but for many years. He was obviously dealing in good part with material collected in interviews with people who were witness to the event that they describe. As a whole, the series appears to be a very solid effort, but it is by no means

Plate 1: San Francisco in 1850 . . . From the top of Telegraph Hill, the artist has shown the advancing wharves--but has done no more than suggest the number of ships in Yerba Buena Cove. Rincon Point is in the center background. (Bancroft Library)

Plate 2: Birdseye View of San Francisco in July of 1852 . . . Market Street Wharf separates Happy Valley and Yerba Buena Cove from the city proper. Central Wharf angles out to enclose the foot of Sacramento Street. Beyond the mass of ships lay the Pacific Wharf, the shorter Broadway Wharf, and the T-shaped structure that was Cunningham's. (S. F. Maritime Museum)

a careful analysis, free of internal inconsistencies. The second major source deals, among other things, with four vessels sunk in the last part of 1851 between Pacific Avenue and Jackson Street, at the southern end of the N-3 alignment. This information is from a long feature story in the San Francisco **Examiner** of August 31, 1890. The reporter was interviewing Captain Fred Lawson, who had personally scuttled the ships in question, together with a number of others—two of which were sunk very close to the C-2 alignment. Captain Lawson was the partner in the purchase of three full blocks of water lots from Doctor Peter Smith, and his description of the location of the ships that he sunk is particularly relevant, as he was using these hulks to establish property lines and effective title to these valuable properties.

The Lawson Ships: Lawson's activity is not only important in establishing the location of ships that he himself sunk, but in describing one of more exotic reasons for the presence of gold rush hulks within the fill of Yerba Buena Cove. Lawson had purchased his water lots at the incredible price of $3,500.00 a block—at a time when the real value of a block on the city front would have been at least a half-million dollars or more, as illustrated by the price of the "city slip" blocks (adjacent to one of Lawson's blocks) in 1853. (Hittell 1878: 199-200) The reason for Lawson's bargain price was that title to the blocks was uncertain, as were many titles to lots in those days. Lawson's universally questioned titled stemmed through the "Peter Smith sales" of June 14, 1851, to January 30, 1852, in which it took six sheriff's auctions of some two thousand acres of city lands to satisfy a court judgment against the city of San Francisco in the amount of about $64,000.00 in favor of the claims of Doctor Peter Smith. The Commissioners of the Funded Debt, who at that moment held title to all city lands, maintained that the sales were illegal. There were, therefore, no legitimate bidders at the sales, with the result that Doctor Peter Smith, Democratic political boss David C. Broderick, and perhaps a few other "insiders" who believed that legal claim might be established in the courts, bought up the properties. Subsequently the Supreme Court

of California solemnly confirmed the sales to be legal, even while recognizing that the "city had sacrificed its patrimony" as the result of a serious misunderstanding.

The price that Lawson paid to Smith for these extremely valuable submerged waterfront properties is indicative of the lack of confidence that the doctor himself had in the title to the lands he had picked up at his own sheriff's sale. But Lawson was prepared to operate on the not uncommon premise that possession was nine tenths of the law--and he had a technique in mind for establishing possession in the face of opposition from wharf owners (that is, franchised operators of city street extensions) whose berthing spaces would be filled up with buildings erected on pilings on Lawson's properties alongside their piers. Lawson describes in the interview his experience in driving pilings on his water lots adjacent to the Pacific Street Wharf, only to have the wharf company turn out a gang at midnight to pull them up again. A careful reading of the interview (in which the newspaper reporter of 1890 does not seem to have appreciated clearly the implications of all Lawson's actions) reveals the acquisition of real Yankee ingenuity by this Norwegian who had immigrated to New York in 1837.

It seems a simple idea to have purchased a worthless hulk amongst the scores available in Yerba Buena Cove and sunk it in the shallows as an "improvement" quite comparable to the permanently moored storeships of the times. However, anyone acquainted with the nature of such wooden ships would immediately realize that the same old tubs that might sink of their own accord off Cape Horn or elsewhere could not be easily scuttled on command, in the face of possible active opposition, within a few minutes, and on a precise spot. It would appear that Lawson employed in each case a large gang of men to ballast the vessel heavily and drill and temporarily plug enough holes so that she could be very swiftly sunk at the edge of the disputed property line. Given these important economic motives and the expense and risk of the undertaking, it seems very probable that the garrulous old captain interviewed forty years after the events identified locations with unusual precision, even if other details might have been subject to lapse of memory.

The Noble: Those four of the ships scuttled by Captain Lawson that might conceivably be encountered by the N-3 excavation were all sunk with the purpose of enhancing his claim to the block of waterlots bounded by Pacific, Jackson, Davis, and Drumm. The first of the ships he sank on or adjacent to this property was the ship **Noble.** In Lawson's words:

> She was used as a storage ship. I put in plenty of ballast and scuttled her, and she can now be found somewhere in the block bounded by Pacific, Jackson, Davis and Drumm streets, with her bow near Pacific. She cost me $500. I slipped her in very quietly one bright moonlight morning about 3 o'clock. Before I could drop her to the bottom the Pacific Wharf Company had the Antelope astern, and before I could prevent it she had fastened a line to my boat and began to steam away. She didn't take me many feet though, for with the cutlass I cut the line and with pistol in hand ordered them to keep off.

The reference to the **Antelope** places the incident no earlier than the first months of 1852, which is when this big sidewheel steamer was brought out from the East for the Sacramento-San Francisco service. The **Noble** was a bark of 207 tons, registered at Boston, as listed in the **Alta California** of June 6, 1850. The **Antelope** was more than twice her size, and would have towed the **Noble** quite a few feet indeed with a few revolutions of her paddlewheels. We may presume that the **Antelope** was trying to tow the sinking **Noble** from a point near Drumm and the Pacific Wharf southeastward (toward the East Street line) away from the steamboat slip.

The Hardy: Although Lawson appears to say flatly that the **Noble** sank on his block, the whole drift of the interview article suggests that the interviewer had a hard time keeping up with the information he was getting. Lawson's story (below) of the sinking of the **Hardy,** suggests that the **Noble** did **not** sink in such a manner as to "settle his title," and may lie closer to the N-3 alignment than the approximate 200 feet we have indicated on Map AA.

> About twenty feet from the Noble and directly opposite Clark Street is the English brig Hardie. She was a large, fine vessel, and I bought her off Captain Ames for $800. When I sunk the Noble the Pacific Wharf Company objected so strongly that we made a sort of compromise, and I brought

> in the Hardie to help remove the Noble from her position. The company furnished the men for the work, and besides their pay they received all the free drinks they wanted. The first day the tide was too low to move her and on the night of the second day a norther came up and somehow . . . the old Hardie had to sink, and that settled my title to the property.

The brig **Hardy** appears in a "List of Storeships" published in the **Alta California** on June 30, 1852. At that time she was located "near Long Wharf." The reference to the "norther"--invariably a phenomenon of winter at San Francisco—suggests that the brig was sunk some time after mid-October. The means by which Lawson fooled the Pacific Wharf Company owners into thinking he was going to remove the **Noble** show how it was possible to remove a sunken hulk that obstructed navigation; the same system of lashing another ship or two alongside and lifting the hulk with the tide must have been used frequently to help clear the harbor and deliver vessels to the shipbreakers at Rincon Point.

As to the possible impact of the sewer excavation on the **Hardy** remains, it would appear certain that she must lie to the west of the **Noble**, at least 200 feet from the alignment.

The Inez: Lawson was not yet finished with sinking ships on his block:

> I don't remember what I paid for the Inez when I bought her off Jim Fairfall and Tom Jones, but she was at the northwest corner of Pacific and Drumm Streets, with her bow toward Pacific. The Pacific Wharf Company naturally didn't care to have the slip used by them spoiled, so when my men drove piles for buildings in the slip in the day-time they had them yanked out at night. I got a little tired of this, so one dark night I floated the Inez in, ran her up to where I wanted her and she was on the bottom in a few minutes. She was so close in to the wharf that her short bowsprit struck the wharf as she was settling and broke short off. She sank so rapidly that one of my men had to swim for it and was almost drowned. The crash apprised the opposition of what was going on, but they were too late in finding out to do any good.

We have followed the San Francisco Maritime Museum's map of hulks and storeships in placing the **Inez** at the northwest corner of Pacific and Drumm—but this location does not appear logical on examination. If Lawson meant that he sank her north of the Pacific Wharf, she would

not have been on his property. And if he really did sink her north of Pacific, she must have been removed subsequently, for the 1857 soundings of the Coast Survey (see Map 2) show a minimum of six feet of water alongside that part of the wharf. We might assume that the **Inez** went down close to the point where we have placed the **Noble,** which in turn would place the **Noble** and **Hardy** further south by perhaps a hundred feet.

The Bethel: Of the four ships that Lawson sunk to protect his rights to the Davis-to-Drumm block south of the Pacific Wharf, the one that appears to have gone down closest to the N-3 alignment was the **Bethel,** which got away from him and sank on the adjoining block between the line of Drumm and East Streets.

> Then there was the English ship that is buried at the corner of Drumm and Clark Streets. Her bow points toward Drumm. She cost me $450. We exchanged a few shots before she went down. That is, I mean the Wharfinger and myself did. I had a line fastened to the wharf to steady her, and he started to cut it so she would drift away. I yelled at him to drop the knife, but he didn't, so a bullet took it out of his hand. But he cut the rope first. It was on election day, and the crowd, hearing the shooting, came rushing down to see what the matter was. Six-shooters were drawn, but no more firing was done. I stayed with the Bethel until she sank, when I rowed away from her; but I didn't get her in the right place. She got on to Miller, Hough & Cassly's property, so I sold her to them.

The Miller, Hough & Cassly property would have been all or part of the small block between Drumm and East Streets, bounded on the north by the Pacific Wharf and on the south by the Jackson Wharf. In 1857 most of the area of this block between the line of Clark Street and the Pacific Wharf was a slip with eight and nine feet of water at mean low tide; if the **Bethel** had gone down here, it is likely that she was removed (see Map 2). But the south half of the block, and in particular the side opposite the corner of Clark and Drumm, was built over by 1897.

Regarding the possibility of the N-3 excavation encountering the hulk of the **Bethel,** it is necessary to consider the location of the East Street seawall projected in 1868 (see Map 3, with reference to the alignment between Pacific and Jackson Streets). It appears that most of the alignment area in which it is conceivable that the **Bethel** may have come

to rest was dredged out and filled with rock during the construction of this first seawall.

A note as to the precise dates of Captain Lawson's ship-sinkings is appropriate, as he mentions scuttling the **Bethel** "on election day." Internal evidence suggests that this would have been the fall general election of 1852, which fell on Tuesday, November 2. The **Alta California** of the 3rd makes no mention of Lawson's possibly newsworthy encounter with the wharfinger—but the election was accompanied by more notable incidents, particularly the murder of a boatman in Pacific Street near Dupont. The following day the **Alta's** news columns were given over to the burning of Sacramento and the local damage wrought by a "norther" of memorable violence. These "northerly busters," as old-timers of the city front know them, are infrequent, unlike the usual southeast gales of winter. Several years may pass between northerly gales—but when one strikes, it can do a great deal of damage to vessels the size of those of 1850 and to structures as flimsy as the wharves of that period. This norther of November 3 is probably the one referred to by Lawson in connection with the sinking of the **Hardy**, although neither this vessel nor the **Noble** is mentioned in the **Alta's** catalogue of storm casualties.

If these dates for Lawson's sinkings are correct, if he was not referring to some other election day and some other norther, then we get a not entirely unlikely picture of feverish ship-scuttling on this block of waterlots. Lawson is sinking the **Bethel** on Tuesday even while he has brought the **Hardy** with the ostensible purpose of removing the **Noble**. The gale is rising by midnight of the same day, and the wharfinger is not keeping a sharp enough eye on Lawson, for (as the **Alta** reported) he was supervising the spiking down of diagonal planking to stiffen his pier in the storm. If this be the case, it is probable that the **Noble** and **Inez** also went down a few days before, the whole operation being a sort of blitz attack on the wharf company.

The prices paid for these vessels—$450.00, $500.00, $800.00--are a good indication of their condition. These are absolute residual-value figures, amounting to what could be realized by Chinese shipwreckers in the form of salvageable timber and fastenings. Any removable materials

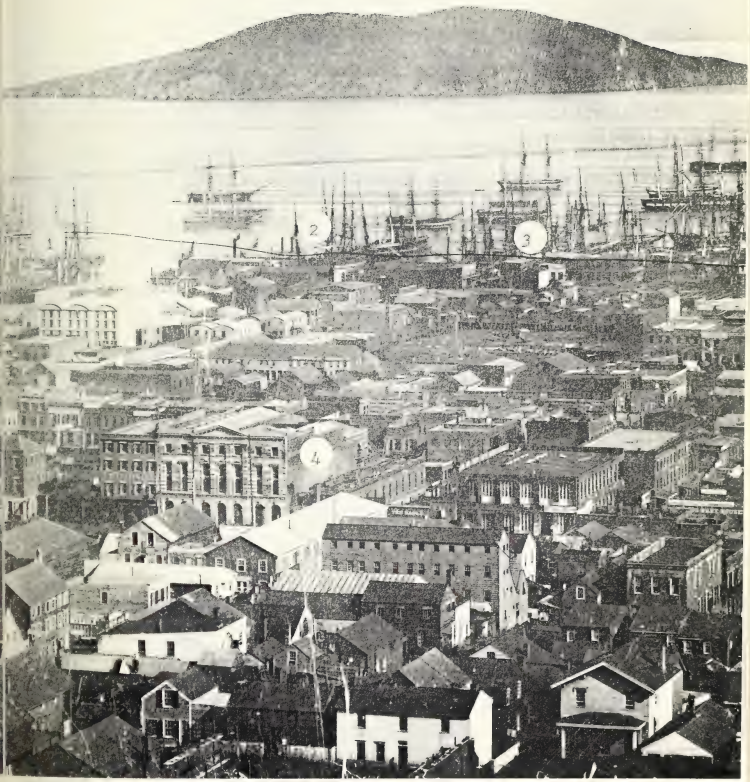


Plate 3: Center Section of Panorama of San Francisco, 1853 . . . This view taken from Nob Hill in 1853 was made before April of that year. The Broadway Wharf appears at (1) with sailing ships alongside. At (2) is the Pacific Street Wharf with bay and ocean steamers alongside. (3) is the Jackson Street Wharf. The area between (2) and (3) is where Captain Lawson sunk his ships to establish his property rights to the block between Davis and Drumm. The city hall (4) is next to the Union Hotel which is undergoing reconstruction. (Oakland Museum)

or gear would have been sold by the previous owners.

The gold rush ships were rather small vessels by the general standards of the late 19th century. None of the vessels we are dealing with appear in **Lloyd's Register** between 1847 and 1850, but at this time **Lloyd's** did not list principal dimensions in any event. A check of **Lloyd's** in the mid-60's for typical sailing ships of the tonnages involved that had been built in the 1840's gives us an idea of the probable dimensions. A typical ship of about 350 tons: length 110', breadth 27', depth of hold 18.5'. Bark of 250 tons: length 94', breadth 24', depth 15'. Brig of 160 tons: length 80', breadth 23.5', depth 13.5'. The depth figure is an inside dimension of the hold; add five or six feet for the distance from the bottom of the keel to the top of the bulwarks. Thus, a probable location for the sinking of the 352-ton **Inez** shows about 15 feet of water on the 1853 Coast Survey Chart, which suggests that she would have had her deck awash on a higher-than-average tide, but with the bulwarks above water.

Most surprising, it should be possible to identify the four ships sunk by Captain Lawson in a contemporary photograph if they sank far enough to the east to lie on the alignment. Plate 3 is from a daguerreian panorama of San Francisco taken from Nob Hill in 1853. The slip between the Pacific and Jackson Street Wharves is visible directly below the notch in the skyline of Goat Island. A Panama steamer lies along the outer portion of the south side of the Pacific Wharf, a port-painted ship just inside of her. Another ship lies at right angles to the wharf, alongside the line of Davis Street. There is a jumble of merchant sail alongside the Jackson Street Wharf to the right. The view of the slip is obscured by waterfront warehouses on its inner side, but the area of the N-3 alignment is visible. The alignment would pass through the locations of the steamer, but no hulks are to be seen in that part of the slip.

The angle of the sun reveals that the photograph was made a little after noon in winter. The absence of the U. S. Marine Hospital (or of any construction activity on the site), confirms that the view was made before April of 1853 (the site of the Marine Hospital appears on a different part of the six-plate view). There is construction activity at the Union

Hotel, next to the City Hall (at the center of the plate). One of the several burnings of the Union Hotel was on November 9, 1852. (Soulé 1854: 407) Thus, it would seem that we have a photograph that shows that Lawson's ships did not sink on the alignment, or that any ship that did was immediately removed. But it is possible that we are not seeing what we think. A rapid development of the Lawson property, and further extension of the Pacific Wharf in November and December of 1852 and the first couple of months of 1853 would place a different interpretation on the photograph.

The Northern Hulks: The northernmost of the three vessels between Green and Chestnut Streets is the **LeBaron**, one of the storeships listed in the series of articlea on the gold rush waterfront that appeared under the general title "Reminiscences" in the **Alta California** in 1882. As located by the original source, the **LeBaron** was about 170 feet southwest of the N-3 alignment. The location given is on the line of Sansome, north of Lombard. This spot does not appear likely when plotted on the 1853 Coast Survey Chart; a little west of Sansome, alongside the steep shoreline, is more probable from the geographical standpoint. By 1857 (see Map 2), the site would lie beneath the North Point Dock (called "Lombard Dock" on this chart) or the North Point Dock Warheouse. The possibility of the hulk lying to the east of its presumed location (and on the N-3 alignment) is extremely remote.

The Palmyra: The brig **Palmyra**, 145 tons, registered at London, is noted in the **Alta California** "Reminiscences" as being "Inside of the India Dock, or what is now (1882) Battery between Greenwich and Filbert." India Dock is shown on the 1857 Coast Survey Chart, and the **Palmyra** must indeed have been well inside it, for when we plot Battery Street on the 1853 chart she would have been lying well offshore in about 21 feet of water. This 145 ton brig used as a storeship is among the smaller class of gold rush vessels—though all of these gold rush ships were comparatively small by the standards soon to be established by the clippers and other ocean carriers of the last half of the nineteenth century. A brig of the

Palmyra's tonnage might have been no more than 80 feet long, if she were typical of brigs of the mid-1840's. As can be seen from the 1857 chart it is impossible that the **Palmyra** could be located eastward on the N-3 alignment as she would have obstructed access to the India Dock, and she would have been removed had she been in such a location. As located by the original source, the **Palmyra** was about 230 feet west of the alignment.

The Philip Hone: The same **Alta California** "Reminiscences" series lists the bark **Philip Hone** (291 tons, registered at New York) as lying a little to the south of Union Street. The writer of the "Reminiscences" seems very specific as to the location and details concerning the vessel—but the difficulty in accepting the details is shown by his recollection of the **Philip Hone** being on the lot adjacent to Flint's Warehouse which actually adjoins the **Palmyra** location. Whether he is correct in describing her as a ship of 500 tons and carrying royal studding sails is questionable, as the **Alta's** harbormaster's list of June 6, 1850, has a bark **Philip Hone** of 291 tons registered out of New York.

Further analysis suggests that a location on Front Street south of Union is reasonable. An **Alta California** advertisement of September 6, 1852, has the storeship **Philip Hone** for rent, near Law's Wharf. Law's Wharf can be seen on the 1853 Coast Survey Chart as being at approximately the intersection of Front and Union Streets. It should be noted that the 12 and 18 foot soundings lines were very close to shore at this point, which implies that if the sunken **Philip Hone** were visible as fill took place she must have been close in herself—no further out than the line of Front Street.

Historical Importance of Gold Rush Hulks: Although the existence of remains of gold rush ships buried in the fill of Yerba Buena Cove excites lively images in the popular imagination, the actual historical value of the examination or preservation of such remains is not as great as might at first glance appear to be the case. The construction of such vessels is well documented in texts printed for the use of ship designers and

builders of the period and by the research of such modern historians of naval architecture as Howard Chapelle. Indeed, when timbers of a gold rush ship appeared in recent construction work at The Embarcadero Center, the San Francisco Maritime Museum resorted to the use of such texts in order to identify and reassemble the bow timbers, and as these timbers are now exhibited in the Maritime Museum, a contemporary drawing is employed to interpret them to the viewer.

Plate 4 shows the appearance of the remains of the famous storeship **Apollo** as they were uncovered on a construction site in 1925. Plate 5 shows the condition of another gold rush ship, **The Vicar of Bray**, as she lies today in the Falkland Islands, preserved from the ravages of shipworms and quick dry rot by Antarctic cold.

From the standpoint of the contributions to historical knowledge that may accrue from historical-archaeological interpretation of the remains of hulks of the gold rush period, we may predict with a confidence based on experience in the field that the returns will be meagre. With regard to the intrinsic artifactual—"museum relic"--value we can say only that a fairly well-preserved portion of such a vessel would without doubt be deserving of preservation for exhibit in the Golden Gate National Recreation Area complex, which now includes the historic ships preserved by the State of California at the Hyde Street Pier.

We cannot suggest that the remains of any of these vessels would represent an historic site that should by the standards of the National Register of Historic Places be preserved intact. The interests of future archaeological examination would not be served to any discernable degree by avoidance of impact, for we are not dealing with a case in which funds and expertise are lacking with regard to the matter at hand. Nor are we dealing with potential structures that should be recovered in all their extant parts for purposes of historical scholarship or public exhibition. A hulk such as that of **The Vicar of Bray**, which is essentially intact as an original ship, is important as an entity. All previous records of the uncovery of gold rush ships in the San Francisco waterfront fill show ships so far deteriorated that they are historically interesting only in their parts. The judgment as to the value of these parts for historical

Plate 4: Remains of the Storeship Apollo, ca. 1925 . . . Like many of the gold rush storeships the **Apollo** burned in the fires of the early 1850's. We are looking at a portion of her stem in this excavation. It would appear that the smaller timbers of the frames had completely rotted out. (California Historical Society)
Plate 5: The Vicar of Bray, a Extant Gold Rush Ship . . . The **Vicar** was photographed among the coal hulks at Port Stanley, in the Falkland Islands where she lies preserved by the Antarctic cold. (S. F. Maritime Museum)

scholarship or exhibition should be made by experts in the field of maritime history and historical preservation and exhibition, if and when any such remains are encountered.

Wharves of the Gold Rush Period: Under the general heading of wharves we here include the frequently associated warehouse structures. It is at this point necessary to refer closely to the 1859 Coast Survey Chart of San Francisco (Map 2). This map may be considered up to date as of 1856. The 1859 version (rather than the first-issued 1857 version) is used here because it shows the soundings made in 1857 for the "second edition" and because it also shows the "Eddy Red Line" of 1853. This stairstep bulkhead line was the offical limit of the city's progressive fill into the bay as established by the California State Legislature. The importance of this line in terms of our present survey is that it confirmed--"forever"—the earlier city survey limits and established a specific waterfront which might be filled up to, along which wharves might be built as extensions of city streets, and from which wharves might be projected into the deeper water. The builders of the gold rush period had to work within the limits of the Eddy survey. We use the 1859 Coast Survey Chart as an essential visual reference because it shows the official waterfront line, shows the actual condition of construction along this line as of at least 1856, and shows the depth of water as of 1857—a matter of importance in reference to the depth of the excavation of the N-3 alignment.

If the map is not described in detail, it may be confusing, and as a result, we feel it best to consider the nature of possible cultural remains along the alignment with specific reference to the style and details of this map, which is one of the most distinguished efforts of perhaps the best cartographic agency in the world at that period.

If you look at the northern part of this map, you will see most clearly the official waterfront line superimposed on the actual shoreline. This line can be followed southward in its jogs at Montgomery, Sansome, Battery, Front, Davis, and Drumm Streets until it angles off to the southeast along East Street (about the present Embarcadero). The approximate sewer alignment shown as a heavy dashed line (wider than

it is in reality) follows roughly the inner side of the modern waterfront (Embarcadero). It must be most strongly emphasized that most other maps of the waterfront of the early city show only survey lines, rather than actual conditions of fill and structures.

As can be seen, the waterfront fill and structures as of 1856 had very rapidly approached or been projected toward the official bulkhead (except in the northernmost portion) but few structures and no fill--with the possible exception of filling under buildings at approximately Jackson Street--extended to the N-3 alignment. To characterize the possibility of recovery of cultural materials of the gold rush period in a single sentence, and from this map only, it is obvious that the southern third of the alignment is the likelier place for cultural resources to remain.

Jackson and Pacific Wharves: The block betweeen Jackson Street and Pacific Street is of particular interest in our gold rush survey, as it was in this area between Davis and Drumm Streets (and perhaps to the eastward) that Captain Lawson appears to have sunk his four ships in order to enhance his property rights. In 1853 the Jackson Street Wharf had still not reached out into the bay far enough to meet the N-3 alignment. But the Pacific Street Wharf had by February of 1852 reached and passed this point (see Map 1). Between 1853 and 1857 the block of water lots that had been bought by Lawson was completely covered with structures, and the next block to the eastward, the block transected by the N-3 alignment was partially built over. As can be seen on Map 2, the northern part of the alignment between the Pacific and Jackson Wharves in 1857 crossed a shallow slip, probably used by bay and coastal schooners. The southern half, however, was built over with structures; given the rate of activity of the "Steam Paddy" during these years it is possible that fill from the sand hills south of Market Street was already being dumped on this site.

The Steam Paddy was a wonder of the age, and its operation was remarked upon by all of the historians of this period. The steam shovel itself was located south of Market Street where parallel ridges of sand reaching as high as 60 feet marked the line of Market Street and its

AP 2~ U.S. Coast Survey, 1859

neighbors to the south. A light railway using small cars drawn by horses extended from the various sites of excavation northward to the waterfront area being filled. The tracks and cars can actually be seen in the fine daguerreian panorama from Nob Hill made in 1852. Following is the earliest contemporary note we have seen regarding this mechanical marvel.

> **Steam Excavator:** This interesting piece of machinery is now in full tide of successful operation on First Street, opposite the store of Messrs. Endicott, Greene & Oakes. The superintendent of the animal, Mr. Hall, we understand, has taken a contract for excavating and grading certain lots on the south side of the street, and for filling up water lots on the north side.
>
> To this end, a suitable railway has been constructed along the edge of the bank as far up as Market Street, furnished with large dirt cars, which are drawn by horses, as the time for locomotives has not yet arrived for this country.
>
> The engine is twenty horsepower, and the machine is said to be capable of excavating from the sand bank a thousand cubic yards of earth per day. With proper arrangements this may possibly be done as each dip of the bucket in the yielding sand will take at least a cubic yard, but what it can accomplish a more compact formation is a matter of guess work.
>
> The sight, however, as it is, is worth seeing, and we advise all persons who do not believe that some things can be done as well as others, to take a walk down there, and witness the ceremony of removing sand hills. (**San Francisco Evening Picayune**, April 16, 1851)

As can be seen from the 1853 daguerreotype Plate 3, the Jackson Wharf was heavily used although it did not project into the bay so far as the Pacific and Broadway Wharves. It was commenced in August of 1853. In 1854 it was, among other things, the landing for the ferry boats to Oakland. (Le Count & Strong 1854: 178) In that same year the wharf also served the "Independent Opposition Line" that competed with the Pacific Mail Steamship Company and the Nicaragua Steamship Company. The liveliest of the woodcut scenes of the San Francisco waterfront of the 1850's, published in Hutchings' **California Magazine** in July of 1859 (Plate 6), shows the Jackson Wharf when it was used by the Sacramento, Marysville, Stockton boats of the California Steam Navigation Company. The big steamer **Antelope** seen in this drawing is the vessel that the Pacific Wharf Company used in its attempt to tow away Captain Lawson's

Noble.

However, the Pacific Wharf was a much more prominent feature of the N-3 alignment during the gold rush years than the Jackson Wharf. This wharf was projected in April of 1851, and by February of 1852 was sufficiently long to be transected by the N-3 alignment. The Pacific Wharf was heavily used by the bay and ocean steamers of the period as can be seen in Plate 3. A sense of the activity of the times and the scenes of the Jackson, Pacific, and Broadway Wharves is captured in a brief passage from **The Annals of San Francisco:**

> At the beginning of 1854, the citizens are as remarkable, as in 1849 they were, for energy for good and evil, and the power of overcoming physical obstacles, and creating mighty material changes. Everywhere in the city is the workman busy at his trade. Laborers of various kinds are still hewing down the rocky hills, excavating the streets, grading and planking them; they are leveling building lots, and rearing mammoth hotels, hospitals, stores, and other edifices; they are piling and capping water lots, and raising a new town upon the deep; gas and water works are forming; sand hills are being continually shifted, and cast, piecemeal, into the bay. The wharves are constantly lined with clipper and other ships, the discharge of whose cargoes gives employment to an army of sailors and boatmen, stevedores and longshoremen. The streets are crowded with wagons and vehicles of every description bearing goods to and from the huge stores and warehouses. The merchant and his clerk are busily buying and selling, bartering and delivering; and fleets of steamers in the bay and rivers are conveying the greater part of the goods disposed of to the interior towns and mining districts. The ocean is covered with a multitude of ships that bear all manner of luxuries and necessaries to San Francisco. Seven hundred and forty-five thousand tons of the most valuable goods were brought into port in one year. All the inhabitants of the city are in some measure engaged in commerce, or in those manufactures and trades that directly enable it to be profitably carried on, or in supplying the wants, the necessities and extravagances of the proper commercial community. The gold of the mines pays for everything, and it all passes through San Francisco. (Soulé 1854: 497)

The Broadway Wharf: A reading of historians of the San Francisco waterfront from the journalistic Morphy to the scholarly Dow would appear to leave some confusion or misapprehension as to the first wharves of

the San Francisco waterfront. The progress of the Broadway Wharf is the root of this confusion. The first wharf suitable for the regular mooring of deepwater vessels and discharge of their cargo was Long Wharf, the projection of Commercial Street, and described previously. However, as is shown on Map I-A there was a minor wharf at Broadway prior to Long Wharf. The fact that Captain Harrison created something of a civic sensation by contriving to moor the **Belfast** alongside this landing should not properly give prominence to the "Broadway Wharf" as the first pier on the waterfront. The famous Broadway Wharf of the early 1850's was begun in the spring of 1851. (Le Count & Strong 1854: 177) As shown on the Coast Survey of February 1852, this wharf did not extend quite as far as the N-3 alignment. By 1853, the end had been projected far enough to be transected by the sewer line.

Our 1853 daguerreotype, Plate 3, shows the Broadway Wharf used by first class ocean sailing ships, while the Pacific Wharf had the steamer trade. But the nature of these uses of the better piers of the central waterfront changed from year to year. In the 1860's the Broadway Wharf was the home base of the giant California Steam Navigation Company monopoly. "The Monopoly" was a term familiar to all Californians of the gold rush years—and it referred to not one, but any one of three corporations devoted to the extortion of the public from time to time. One of the monopolies was the Pacific Mail Steamship Company that controlled transportation to the eastern states; the second was the California Steam Navigation Company, a combination of river-boat owners that had a complete lock on the traffic between San Francisco and the entry points to the mining regions of Sacramento, Marysville, and Stockton; the third was the California Stage Company, which monopolized the business between the river ports and the mines themselves. All three of these corporations were capitalized at above a million dollars (a huge figure for the times) and operated in the classic model of primitive monopolies in using their great resources to undercut "opposition" rates until their opponents were starved out or bought in, at which point the monopoly would raise its rates sufficiently to regain any losses it might have suffered. Interestingly, all three of these monopolies conducted

technically first-class operations that were quite the wonder of visitors from abroad.

The Vallejo Wharf: The wharf at Vallejo Street was not commenced until June of 1853, and does not appear on the Coast Survey Chart of that year. As can be seen on the 1857 chart, it was quickly extended to become one of the most prominent features of the waterfront. The wharf as seen on Map 2 is about the same configuration as the structure that persisted down to the construction of the new seawall in the early 80's. E. P. Flint and Charles Minturn were associated in this wharf company. Flint was the partner in Flint, Peabody and Company, one of the leading commission merchant firms of San Francisco and operator of a line of clipper ships to New York. Flint's Warehouse on Sansome near Greenwich was one of the early brick waterfront houses. Minturn was an associate of Cunningham in the operation of Cunningham's (later called Minturn's) Wharf on approximately the line of Front Street between Green and Vallejo, an early structure considerably to the west of the N-3 alignment. The newer Vallejo Wharf was transected by the alignment from the date of its original construction in 1853. Cunningham's Warehouse at the northwest corner of Green and Front Street was erected in 1850 when the "T-shaped" Cunningham's Wharf, built along the two fathom line, was for a short while a primary steamer landing. Fuller description of the history of this and other wharf warehouses of the period will be found in the late nineteenth century section on the city front.

Law's Wharf, Griffing's Wharf, Shaw's Wharf, and the India Dock: On the 1853 Coast Survey Chart (Map I) Law's Wharf is identified at the foot of Union Street. The wharf just north of it, at Filbert Street is Griffing's Wharf. Both of these wharves, like Cunningham's, parallel the deepwater line, which explains their early construction at these locations. By 1857 the shoreline had been extended, the water had silted up, and two completely different wharf structures had taken their places. None of these wharves extended far enough into the bay to be transected by the N-3 alignment, but the successor structures, Shaw Wharf, between Union

and Filbert Streets, and the India Dock, between Filbert and Greenwich, approach to within 50-100 feet of the alignment.

Shaw's Wharf was by 1857 extended close to the line of Front Street, the official city bulkhead line. On the 1859 Chart (Map 2) a bulkhead projection along Front Street was identified as "Cunningham's Wharf"—the former Cunningham's Wharf now being called Minturn's Wharf. What happened as the city front developed was that Shaw's Wharf, later called Cowell's Wharf, was projected to Front Street and then angled north along the line of Front, enclosing the original India Dock seen on the 1859 Chart.

The India Dock had been projected by Daniel Gibbs, proprietor of the two fine brick warehouses on either side of Vallejo Street at Front. The name of the dock implies the far-ranging mercantile enthusiasms of its builders.

As far as the possibility of cultural remains of this period goes, it can only be pointed out that vessels visiting Shaw's Wharf and the India Dock necessarily traversed the N-3 alignment in the process of mooring. It must also be added that the six- and seven-foot depths of water noted on the 1859 Chart strongly suggest that dredging took place at subsequent intervals.

The North Point Docks: Strictly speaking, the North Point Dock was the extension of Sansome Street between Lombard and Chestnut; however, this was only the first of a set of piers following Chestnut, Sansome, Lombard, and Battery Streets, that comprised the premier dock and warehouse district of the clipper-ship period. Here is where the California Clippers of the late 1850's, the Maine-built Downeasters that succeeded them, and the big iron and steel Cape Horners of British and European registry landed their goods alongside the brick warehouses built during the 1850's and '60's.

The classic scene of this activity (where the Lombard Dock and Greenwich Dock seen on the 1859 chart extend across the N-3 alignment) is the appended lithograph of 1856 (Plate 7). The lithograph is extremely accurate in its details, as can be proved by references to photographs of

the same place not long after. The view is from Telegraph Hill looking northward along Sansome Street, to North Point Dock. The N-3 alignment transects the end of this pier. The pier running across at right angles to the North point Dock follows Lombard Street. At the right, parallel to Sansome Street, is the wharf at Greenwich Street, the end of which is also transected by the alignment. This lithograph, drawn by C. B. Gifford and printed in San Francisco, shows the clipper ship **Great Republic**—the largest of her type ever built—at the right, alongside the Greenwich Dock. The clippers **Hurricane** and **Zenobia** are discharging at the Lombard and North Point Docks.

If the lithograph cannot tell us the nature of the cargo discharged during the gold rush years, the published cargo lists make for fascinating reading. The **Alta** on July 6, 1852, lists the cargoes for the clipper ships and the old New England packets. From New York the clipper ship **Tornado** carried consignments of goods to the California commission merchants—whose orders left San Francisco every two weeks and took 30 days to arrive in the East—"13 fathoms of chains, 323 pieces and packages of machinery, 300 fire brick, and 59 packages of merchandise to Williams and Meiggs [this would be machinery for Harry Meiggs sawmills]. . . . 100,000 laths, 24,047 feet of lumber, 13 pieces of mahogany, 75 packages of merchandise for John Parrott [this was undoubtedly meant for finishing the interior of Parrott's Block—the first big imposing business house in San Francisco, at the corner of Montgomery and California, that was built with granite imported from China and erected by Chinese workers for occupants such as Adams & Company, the express agents, and Page, Bacon & Company, bankers]. . . . 3 stoves, 1 iron shaft, 1 wheel hopper, 1 corn mill, 200 sides of leather, 30 barrels of butter, 9 iron wheels, 1 reaper, 1 iron door, 7 pigs of tin, 56 reels of lead pipe, 50 kegs of nails, 3 boxes of starch, 3 barrels of almonds, 10 anvils, 72 hogsheads of butter, 200 boxes of tin, 50 bundles of shooks, 139 tons of coal, 727 boxes of candles, 2 mills and 10 grindstones, 1 iron frame, 40 dozen shovels, 52 dozen pick handles, . . . 28 casks, 183 kegs, 168 pieces of machinery, 244 sheets of boiler plates, 363 bars [of iron], 260 bundles of iron, 2 barrels of cheese, 1 winch and 1 capstan . . ."

late 6: **The Antelope and the Bragdon longside the Jackson Street Wharf, July, 59** . . . (Hutchings' California Magazine)
late 7: **Lombard, North Point, and reenwich Docks, ca. 1856** . . . This view, oking down Sansome Street, was "drawn om nature" by C. B. Gifford. The lippers **Great Republic** and **Hurricane** re discharging cargo into what was a old rush warehouse row. (1) is the North oint Warehouse, built of rubble from elegraph Hill, (2) is the Lombard arehouse, (3) the Bay Warehouse, (4) as Scott's, and later Frank's Warehouse, nd across the street (5) is Flint, Peabody Company's Warehouse. (S. F. Maritime luseum)

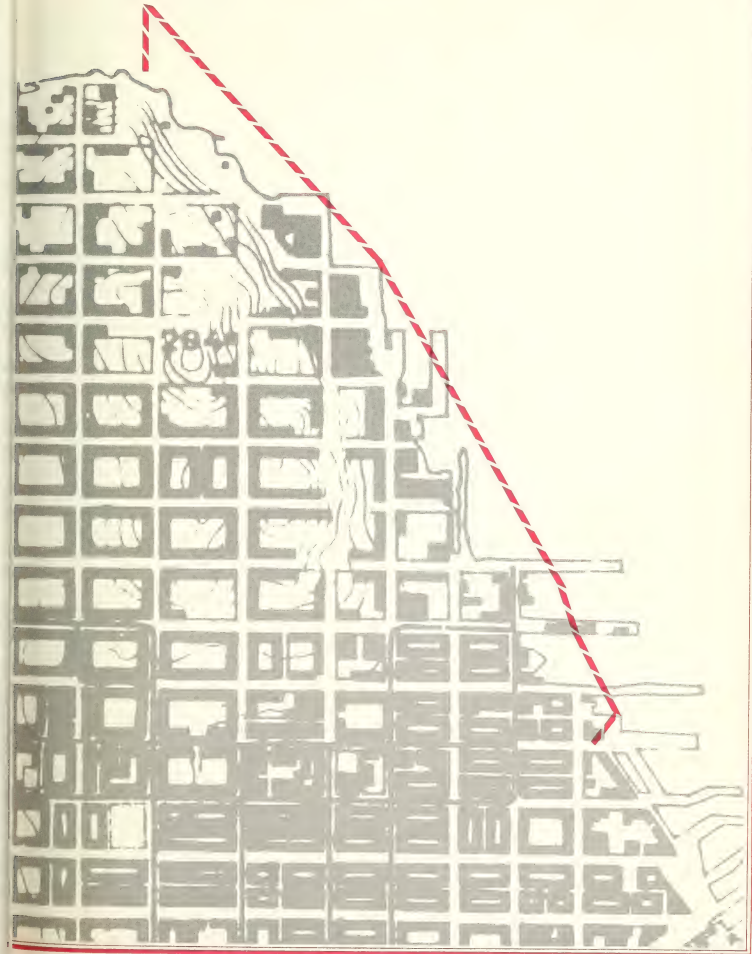
If the **Tornado** carried the stuff to build the city the clipper ship **Stag Hound,** also from New York, carried that and more. In addition to a long list of trunks and chests assigned as personal belongings to individuals, the **Stag Hound** carried 75 firkins of butter, 4 boxes of books, 2 half pipes of liquor, 70 baskets of champagne, 3 cartons of cigars, 16 boxes of drugs, 5 boxes of looking glasses, 4 barrels of carpeting tacks, 4 boxes and 34 cases of stationery for Le Count & Strong (stationery printers and publishers), 21 firkins of butter for W. T. Coleman (a leading capitalist), 90 cases of wine, 15 half barrels of whiskey, 20 cases of sardines, 2,005 barrels of flour, 15 clocks, 150 boxes of soap. The cargo list covers two columns of fine **Alta** type with a staggering diversity of everything from carbolic acid and balls of twine, to paper hangings and iron safes. The drinking public was well supplied with countless barrels, cases, pipes (126-gallon barrels), and baskets of champagne, brandy, wine, whiskey, and gin. The large number of boxes of books shipped to individuals would indicate that San Francisco at least had literate drinkers.

Aboard the clipper **Sea Nymph,** also out of New York, were such items as 7 barrels of rice, 2 wagons, and 12 cases of furniture for J. R. Rollinson and Company; to B. Loutrell went 20 cast iron pillers, 50 cast iron braces, 67 bundles of posts, and 256 bundles of wire. Each of these big new clipper ships might carry 1,500 to 2,000 tons of merchandise--four or five times the average cargo of the much smaller and slower vessels of only two years before. The names of the ships themselves indicate the excitement wrought by the revolution in ocean transportation caused by the California gold rush and its clipper ships. On the date that the **Tornado,** the **Sea Nymph,** and the **Stag Hound** were discharging at San Francisco, the shipping list in the **Alta** contained numerous names of old-fashioned packets--such as the **Alfred,** the **Emily Taylor,** the **Eliza Morris,** and the **Kensington.** Clipper ships came with names like **Flying Cloud, Young America,** and **Sovereign of the Seas.**

Gone were the "old days" of 1849 when a ship's captain, or supercargo, might negotiate the sale of his cargo to eager merchants before he tucked his sails into a decent harbor furl; when an operator like Sam Brannan might horrify the business community of the town by

snapping up an entire ship cargo of tea, instead of taking only a share. Now cargoes consisting of materials and merchandise that had been ordered by San Francisco merchants, or their New York partners, were duly discharged into substantial brick warehouses like those seen in Plate 7. Unexpected shortages no longer created bonanza markets in such exotic items as carpet tacks, nor were the potholes in the streets filled with merchandise that was suddenly in oversupply as the result of coincidental arrivals.

By 1856, warehouse space was plentiful, commerce was regular, and in most respects the handling and storage of materials was not much different than it was fifty years later. The brick warehouses were built as natural adjuncts to the wharves. The North Point Dock Warehouse (1), which was later called the Sea Wall Warehouse, was built in about 1854 with the rubble from Telegraph Hill mixed with cement to make the first story. It was owned by Adams & Company, a banking house, that held the position that Wells Fargo occupied later in the express business. The missing books of Adams & Company turned up in 1863 under the North Point Dock. W. T. Coleman was the owner of the North Point Dock and the adjoining warehouse. Next to the North Point Dock Warehouse, in the lithograph, was the Lombard Warehouse (2) which was built in 1857. Continuing down the row of warehouses is the Bay Warehouse (3), and Scott's Warehouse (4) which first appear in the city directories in October of 1856, but were probably built in 1854 or 1855. Across the street the sign "Flint's Warehouse" appears on the roof of the big two-story brick building owned by Alfred Flint and J. P. Peabody who together with Glidden and Williams owned the clipper **Witch of the Wave** and represented the Glidden and Williams interest in the clipper ships, the **Golden West, Queen of the Seas, Belle of the West, Morning Light,** and **Sierra Nevada.** By October of 1856 they were in their new warehouse (5) shown in the lithograph at the corner of Greenwich and Battery and at that same time they were also occupying the North Point Dock Warehouse. A fuller discussion of these warehouses appears together with Sanborn Maps of 1887 in the section of this report devoted to the late nineteenth century on the city front.



AP 3 ~ *U.S. Coast Survey, 1869*

THE CITY BUILDING PERIOD . . . 1858-1880

The term "Gold Rush Period" has been used to cover rather different spans of time by different historians, depending upon their points of view. The year 1853 saw the largest export of treasure, and more people left California than arrived. The construction of many rather elegant buildings quite changed the physical appearance of the town. The widespread business failures of 1855—a result of overexpansion and declining revenues—mark another "end" to the gold rush times, as does the social and political upheaval of the Second Vigilance Committee excitement of 1856. But gold mining was still the cornerstone of the California economy, and some historians have chosen to extend the period through the 1850's and even into the 1860's.

We have here taken 1857 as marking the end of the gold rush waterfront development period for the very practical reason that in 1857 the Coast Survey produced its new chart of San Francisco. This remarkably handsome, detailed, and reliable document that may be said to demonstrate most accurately the state of the city front at the end of a period that had finally culminated in overbuilding, not only in the form of downtown business blocks but also in waterfront facilities.

As can be seen by comparison with the 1869 Coast Survey Chart (Map 3), development in the way of the N-3 alignment was slight between 1857 and 1868. As will be seen below, piers were reconstructed and two sections of unsatisfactory seawall built, but the physical waterfront was much the same and subject to the same use patterns.

From the standpoint of the political history of the waterfront, the transfer of the port facilities to the control of the Board of State Harbor Commissioners in 1863 was an event of the greatest importance. But the impact of its potential on the N-3 alignment with regard to historic archaeology was slow in coming. Our 1877 waterfront chart (Map 4) shows substantial building beyond the line of 1869. Indeed, the city front is almost everywhere extended to the official bulkhead line seen on Map 2. At the same time, Map 4 shows the sweeping proposal of the Harbor Commission to entirely realign the bulkhead. The building of the new seawall and Embarcadero (between 1878 and 1899 along the N-3 alignment) cleary marks the end of a period for our purposes, as the possibility of encountering cultural remains in any quantity dating from the period after the grading of The Embarcadero is drastically reduced.

Hence, in this section, we will discuss the nature and development of the "original" waterfront from the late 1850's through about 1880.

Wharves: By 1856 the investment in wharf structures along the San Francisco waterfront was extremely large, even startling as compared to the investment in handsome new downtown buildings that attracted the attention and admiration of visiting Photographers. Le Count & Strong's 1854 Directory lists the capitalization of most of the larger wharves from Market Street north. Between them, the Broadway, Central, Clay, Jackson, Market, Vallejo, and Washington Street wharves were capitalized at $1,895,000—a staggering sum for these rather unprepossessing structures. The actual cost of construction of these wharves was undoubtedly far less than the capitalization of the joint stock companies that built them, if we are to judge by the cost figures given for three of the smaller, individually owned piers in the neighborhood. For instance, Shaw's Wharf cost $37,000 in 1853, though it must be kept in mind that it was only a third to a fifth as long as some of the wharves mentioned above. In any event, the capitalization of these companies is some indication of the value of the properties—the wharves themselves and the extremely valuable franchises that permitted their construction. (Le Count & Strong 1854: 177-179)

As these gold rush wharves deteriorated during the late 50's the franchise holders, who generally held ten-year leases from the city, were of course loath to invest huge amounts in needed reconstruction unless they could achieve some coup comparable to the infamous Bulkhead Bill of 1860 that would have given them fifty-year leases on their property. This swindle was vetoed by Governor Downey as the result of intense pressure from the citizens of San Francisco. As distant an observer as the **Shasta Courier** characterized the Bulkhead Bill as "the most disgusting, unblushing, infernal, rascally, scoundrelly scheme to enrich a parcel of unconscionable speculators and swindlers that was ever concocted in any country or presented to any Legislature." (**Shasta Courier** 1860) When Governor Downey arrived in San Francisco a few days after his April 16th veto, the **Bulletin** under "Local Matters" headlined "Grand Jubilee Over the Bulkhead Veto! Great Torchlight Procession! . . . Magnificent Pyrotechnic Display! . . . The City and Bay Illuminated! . . . Salvos of Artillery! . . . Tremendous Enthusiasm!" (**Bulletin**, April, 1860)

However, one physical result of the failure of the wharf companies to gain practically permanent control of the waterfront together with the subsequent creation of the State Harbor Commission was that the wharf owners invested as little as possible in maintenance or improvement of their property after 1860. The **Alta California** of November 29, 1863, reported that a portion of the Vallejo Street Wharf literally collapsed, precipitating twenty tons of coal into the bay. As the leases expired between 1863 and 1866 the Harbor Commission took over the properties (often after legal battles). The public now owned all of these dilapidated properties, which the Harbor Commission proceeded to rebuild as funds became available. The wharves we see on the 1877 chart (Map 4) were not the same structures seen on the 1859 chart. Note that the piers from Pacific Street to Market have been reoriented to the first seawall, which in this area followed the same line as the new wall, thus avoiding the curious doglegs formerly necessary in order to deal with the problem of Market Street approaching the bay at a different angle than the streets further north. In reconstructing the wharves, the pilings of the gold rush period would have been pulled, except perhaps at Pacific Street and

Jackson Street, where filling had taken place and the lower part of old pilings would have been preserved from the ravages of ship worms and would probably not have interefered with new construction.

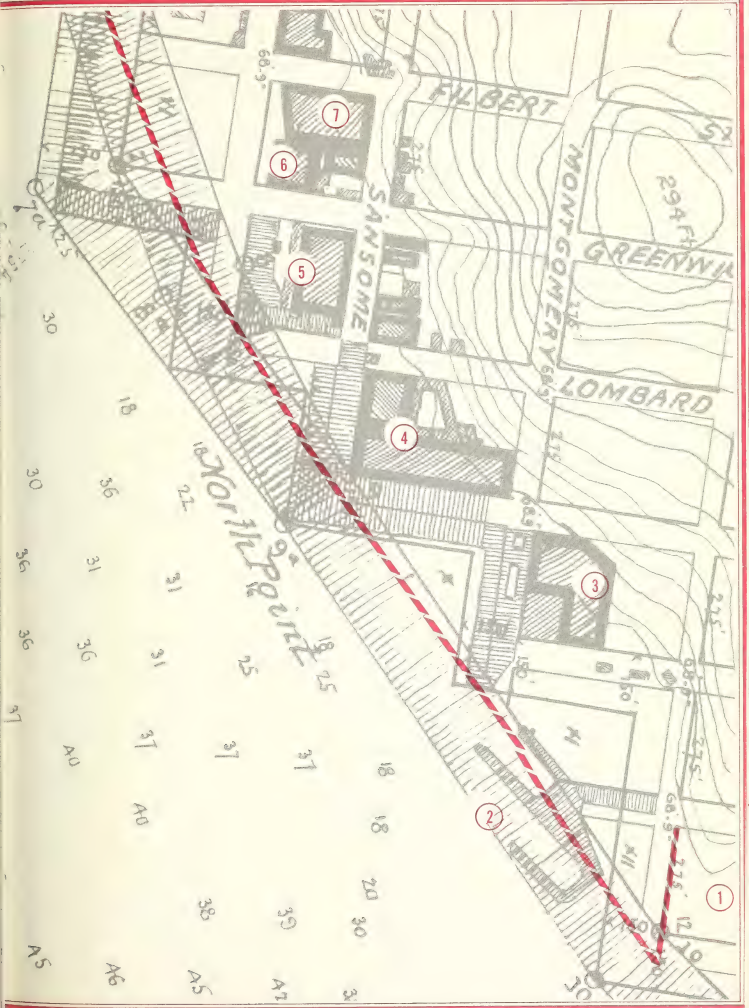
The Seawall: Two seawalls have been built to protect the waterfront of San Francisco from the slippage and subsidence of the lands filled in behind the advancing wharves of the 1850's and 1860's. The first consisted of two stretches (built as three sections), one along Front Street and the other along East Street, constructed in 1867-1869. Map 4 shows the exact location of the two sections of the old wall in the N-3 contract area and the layout for the new seawall projected in 1877.

The N-3 alignment lies slightly to the eastward of the end of the old Front Street wall, but it appears that it will transect the East Street wall between Pacific and Jackson Streets. It is also in this area that the alignment will transect lands filled before the construction of the new seawall.

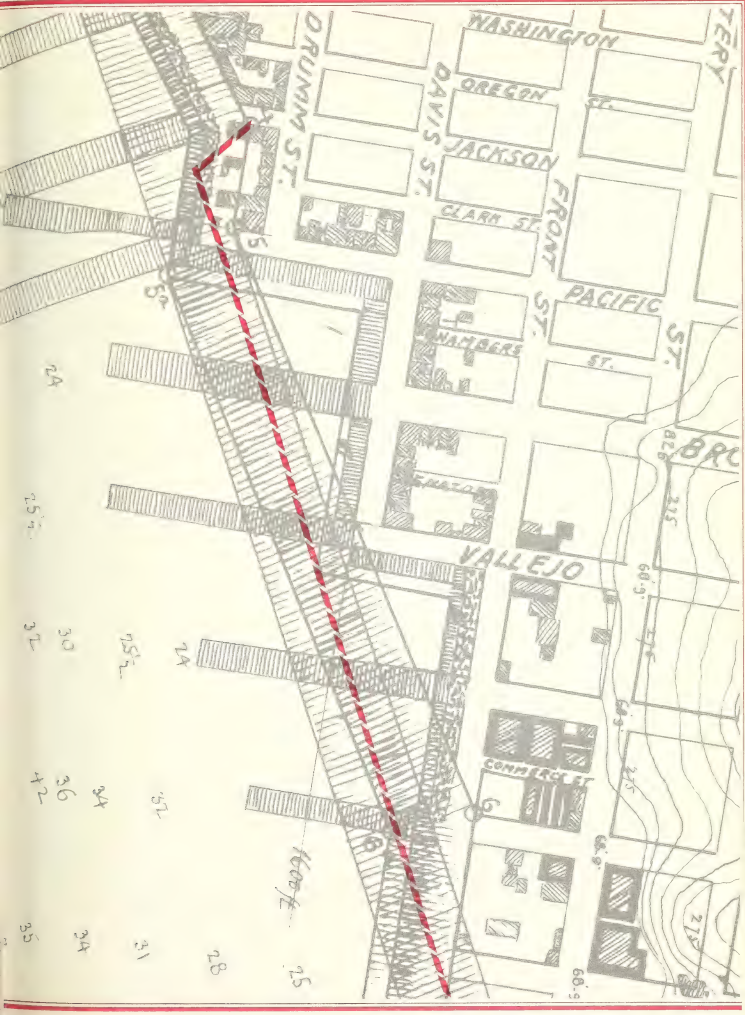
Although the Board of State Harbor Commissioners was as late as 1875 still affirming the excellence of the first seawall construction and deploring the lack of funds that precluded extension of this wall along the old Eddy survey line for the waterfront, T. J. Arnold, the engineer of the seawall, was in 1871 pointing out that the seawall line was bad and would "furnish unceasing work for the dredger" as a result of its angular configuration. (H. Com. 1875: 14; 1871: 23)

Time was proving Arnold right, and rather than extending the old seawall line, the Harbor Commissioners determined the need of a new line for the city front. As can be seen from Map 4, the new seawall line was almost entirely outside the line of the old front and was laid out so that the tide would sweep smoothly along its face.

The new seawall was constructed along the N-3 alignment between the fall of 1878 and May of 1889, the northern part (from Kearny to between Front and Davis) being built between 1878 and 1881, with the next sections to Pacific Street being finished in 1886 and the following section to Clay Street in 1889. Some of the plates included in this report show the progress of this wall.



AP 4 ~ *State Harbor Commission Ms., 1877, Northern Part*



AP 4 - *State Harbor Commission Ms., 1877, Southern Part*

The N-3 alignment lies not on top of what is popularly construed as the seawall—the basic rock embankment on the bay side—but transects the earth backfill behind the rock wall. This fill was part of the seawall plan and the successive construction contracts, not fill placed as time or inclination dictated at some later dates. An essential portion of the seawall ideal was the creation of The Embarcadero. The fill, therefore, would have been emplaced under contract provisions that implied some speed in construction. From the standpoint of historical archaeology the implication of the construction method is that the fill would not contain the great accumulation of trash and debris containing materials of cultural interest that might have been the case had the fill been achieved by dumping over a long period. On the other hand, it is probably fair to assume that the contractors were glad to accept free fill that might have contained some such materials.

The following is a portion of a study from the files of the Port Authority that we think the most concise and informative sketch of the construction methods of both the old and new seawalls.

The First or "Old" Seawall: "It was early realized that some method must be employed to prevent the filling material washing into the deeper waters of the bay. Soulé in 1854 stated: 'The tides are also continually washing out particles of the loose sand, and thus still more danger is threatened to the stability of many buildings. It seems absolutely necessary for the protection of the lower part of the city, that a great seawall, on the outer front of the harbor, be soon constructed. . . If, in addition to such breastwork against the waves on one side and the rolling sands on the other, the foundations of the larger and more important buildings, to be erected on the beach and water lots were deeply and closely piled, much farther security would be obtained for the structures.' (Soulé 1854: 529)

"In his report of April 7, 1856, the City Surveyor noted: 'Any permanent improvement in the lower or wharf portion of the city, is materially affected by the insecurity of the foundations, which can only be remedied by filling in with earth secured in its place, and the harbor protected from invasion by a Bulkhead or Seawall, constructed for present

purposes from Rincon Point to the eastern base of Telegraph Hill. The necessity for such a work immediately should be paramount to every other consideration.' (Rep. of City Surveyor 1856: 15)

"The owners of the early wharves proposed a stone bulkhead or seawall which they would build before the expiration of their patents, provided they were permitted to retain control of the waterfront. However, on April 24, 1863, after a bitter political battle, the administration of the Harbor Front was vested in a Board consisting of three Commissioners, the first meeting of which was held on the 4th of November, 1863.

"Conforming with the statute, the commissioners employed Thaddeus R. Brooks to prepare a survey, as a prerequisite to the construction of a permanent seawall, covering the waterfront from the north line of Harrison Street to the south line of Chestnut Street. In his report dated March, 1866, he stated that a sounding rod of 1-1/2 inch pipe was driven at 75 foot intervals on the inner, center and outer lines of the proposed waterfront and on a fourth line 60 feet beyond. The sounding rod was driven to a sufficient depth 'to sustain a steady weight of nearly thirty-four tons.'

"A prize of $1000.00 for the best design for a seawall along the line was awarded to Lewis and Allardt on the 20th of September, 1866. The seawall consisted of an excavated channel sixty feet wide at the bottom, and twenty feet below mean low tide. In this channel stones were thrown 'pell-mell' along the center line, the larger rock on the water side, and formed into a rock embankment thirteen feet wide at the level of mean low tide. This structure was allowed to settle until a firm foundation was reached, after which it was topped with a concrete wall. Time required for settling varied, depending upon the subsoil conditions; but according to specifications it should never be less than several months. Contracts were signed the latter part of July, 1867, and by 1869 the section of wall between Mission and Pacific Streets and between Vallejo and Union Streets had been completed.

"In 1871 the structure was carefully examined by the engineer of the Harbor Board and although some portions were over four years old

the seawall was found to be in perfect condition, with no evidence of any lateral movement of the embankment and but a slight settlement (from one to three inches) caused, in the opinion of the Board, by the compacting of material which the embankment was formed. In 1873 the Engineer of the State Harbor Commissioners reported: 'Of the material used in the embankment a very small portion indeed has shown any signs of decomposition by exposure to the water . . .'

The New Seawall: "As early as 1871 it was realized that the location of the seawall was not the most advantageous, as the wall set up a series of traps which caught the vast amount of sediment being discharged into the Bay. 'The first and only complete remedy that suggests itself is to modify the line of the waterfront so that it shall conform to the general directions of the currents of the bay . . .' (H. Com. 1871: 23) Hence in the 1877 session of the Legislature a special Commission was appointed to select a new line for the seawall around the city front. The line so selected was approved the following year, changing the alignment of the waterfront or bulkhead line from the east side of Taylor Street to the southern boundary of the county, the location lying in water from 10 feet to 24 feet in depth, and being essentially that of the present seawall.

"In August, 1878, plans were completed and bids were advertised for Section 1 of the seawall which was to commence at the intersection of the easterly line of Kearny Street with the waterfront line and was to run 1000 feet westerly. The last section of the bulkhead between its northwesterly limit west of Van Ness Avenue and its southerly limit at Channel Street was completed during the Biennial Period ending June 30, 1916.

"The completed waterfront varies greatly in the depth and the character of formations. Much of the wall is adjacent to filled ground with frequent sudden variations due to jutting of rock ledges from hills now, or formerly, a portion of the waterfront. In many localities piles 115 feet long have failed to reach a solid foundation. At Piers 48 and 50 near the foot of Channel Street, an investigation of the foundations revealed a submerged valley, partially filled with a very soft material,

across the site of the piers about 800 feet from the shore.

"It was necessary, therefore, to design a seawall applicable to the majority of natural conditions, altering the construction where special conditions existed. In building most of the present wall a trench twenty to thirty feet wide on the bottom was dredged in the soft mud to a depth varying (according to the density and character of material) from twenty feet to thirty-five feet below low water. This trench received the toe of the slope of an embankment of loose broken stone one hundred feet wide at a point twenty feet below low tide, the outer toe lying directly under the outer line of the waterfront. The wall ascends on the natural slope assumed by the material under water until it reaches City Base on the Shore side and low water mark on the water side. From this latter point a layer of large rock four feet in thickness was hand-laid on a slope of 4 to 1 shorewards, ending at a point approximately 50 feet from the waterfront line.

"Rock for the early construction was quarried on the north and east faces of Telegraph Hill because it was easily obtained. Subsequently other sources furnished over one million tons of rock for the seawall, most of which was planted in apparently bottomless mud in the region from Mission Street south to a point beyond Brannan Street. The filling behind the wall consisted of defective or soft stones from the quarry, quarry scrapings, sand from the dunes of the city and, subsequent to 1877, of mud dredged up from the waterfront. This area was surfaced with macadam or paving when it had sufficiently settled." (San Francisco Port Authority Scraps)

A Look at Old and New Seawall Construction: There appear to be very few extant photographs that show anything of the construction of the early seawalls, either that of 1867-68 or the portions of the new seawall built between 1879 and 1884. We have turned up three, which are presented here.

The first (Plate 8) shows the seawall along Front Street in 1868. The view was made from the Vallejo Street Wharf, then a notable steamer landing. In the foreground is the omnibus for the "Original House" hotel,

Plate 8: The Old Seawall, 1868 . . . Looking from the Vallejo Street Wharf towards Telegraph Hill, this view shows the recently emplaced seawall along Front Street (center background). The rock was supplied by the quarry at Telegraph Hill in the background.

Plate 9: Construction of the New Seawall, ca. 1881 . . . While loungers at the end of old Meiggs' Wharf eye the cameraman, a little train carries rocks out to form Section A of the new seawall—the first section north of the N-3 alignment.

Plate 10: Building the New Seawall, ca. March 1881 . . . The Union Street Wharf has been cut through (right of center) and a temporary wharf parallel to the new waterfront is being used for dumping rock to form the seawall. (these views, S. F. Maritime Museum)

with other stages and busses behind. The two-story brick warehouse at the head of the wharf is one of the twin Gibb's Warehouses, which stand today at Vallejo and Front as the oldest structures of their type in nearly their original condition. From in front of the Gibb's Warehouse to the right, along Front Street stretches a recently completed section of the old seawall, the rock bulkhead clearly visible. Just to the right of Gibb's Warehouse one can see the blasted slope of Telegraph Hill with a huge pyramid of broken rock sliding down to the street level. Perhaps this is also material for the seawall, or perhaps it is ballast. At the right of the photograph on Front Street is Cunningham's Warehouse, at the corner of Green Street. Reference to the Coast Survey Chart of 1869 (Map 3) shows this seawall along Front Street as a narrow and slightly lumpy projection, easily distinguishable from the regular wharves. It reached not quite as far as the N-3 alignment.

The building of the new seawall is seen in Plate 9. The loungers in the foreground are viewing the operation from the dilapidated end of old Meigg's Wharf. The construction going on in the background is probably that of Section A, built in 1880 and 1881. The dinky locomotive and cars carrying rock are operating on a trestle advanced along the line of the wall. In the right background is a large piledriver, probably engaged in the construction of the long grain wharf seen in contemporary panorama, Plate 19, and also on the Sanborn Maps FF and GG. Filling of the 150 feet back of the rock seawall has not begun in this photograph. Along this northernmost part of the seawall, including perhaps some of the area of the N-3 alignment south of North Point Street, barges were used to dump dredged mud as the cheapest means of filling. If such mud was spoil from the wharf slip to the southward, which is probable, it may have contained the scattering of cultural debris that would be associated with wharfside shipping activity. There would of course be no stratigraphy in the occurrence of such materials as the original deposits would have been completely churned up in the course of dredging and dumping.

The third photograph (Plate 10) must have been taken around March or April of 1884 when Section 5 of the new seawall was getting under way. This view corresponds almost exactly to that portion of the north

waterfront panorama identified as Plate 20. It was taken after the date of the panorama and shows beginnings of an extension of the seawall from just north of Union Street to Drumm Street. The present pier extensions of Union, Green, Vallejo, and Broadway wharves had been built outward at an angle from their original direction along the line of the street, in order to conform to the plan of the new seawall and Embarcadero when it reached their locations. In this photograph the Union Street Wharf has been cut through and a temporary wharf constructed between Filbert and Union Street along the line of the rock seawall. The rock fill will be dumped from this temporary trestle. It may be that not only the decking of the old inner portion of the pier will be removed but that the pilings will also be pulled before the earth backfill forming The Embarcadero is emplaced. However, it would not appear that there would have been any important engineering reason for removing the piles below the level of the projected roadway.

The Merchant's Dry Dock and Shipyards: A manuscript map drawn for the State Harbor Commission, and now in the collections of the Map Room of the Bancroft Library, is most useful in locating the precise position of the Merchant's Dry Dock in 1877. The map was drawn to show the projection of the new seawall—the shaded portion that overlays the docks and wharves on Map 4. The floating Merchant's Dry Docks appear like a big claw at the end of the blocks bounded by Montgomery to the east, Kearny to the west, Francisco at the south, and North Point Street to the north, with a tip of the block lopped off the typical triangular shape of seawall lots that resulted from cutting through the Eddy line of stair-steps along the city front.

The N-3 alignment is shown as an added line (not in scale but as an indication) and it can be seen clearly cutting through the site of the Merchant's Dry Dock. The N-5 pump station site is shown with a heavy, diagonal line as a rectangular area occupying the center of Kearny Street between North Point and Bay. The scale on this enlarged portion of the 1877 manuscript map (4) is 275 feet to an inch—a city block in this part of the north waterfront measured 275 feet wide, and half again as long.

Plate 11: Looking South from Martin Vice's Boatyard, ca. 1864 . . . The big brick warehouse in the distance is the North Point Warehouse where the clippers were pulled alongside. The two small houses are on the line of Montgomery Street. The stone loading operation, at the lower left can be seen more clearly in the plate below. (S. F. Maritime Museum)

Plate 12: Looking North from Martin Vice's Boatyard, ca. 1864 . . . The hoist for lifting the big blocks of stone (probably unloaded from scow schooners down from Folsom) identifies this as "the other half" of the beach at the foot of a small bluff, on a shallow lagoon, where Martin Vice chose to build boats from perhaps as early as 1858.

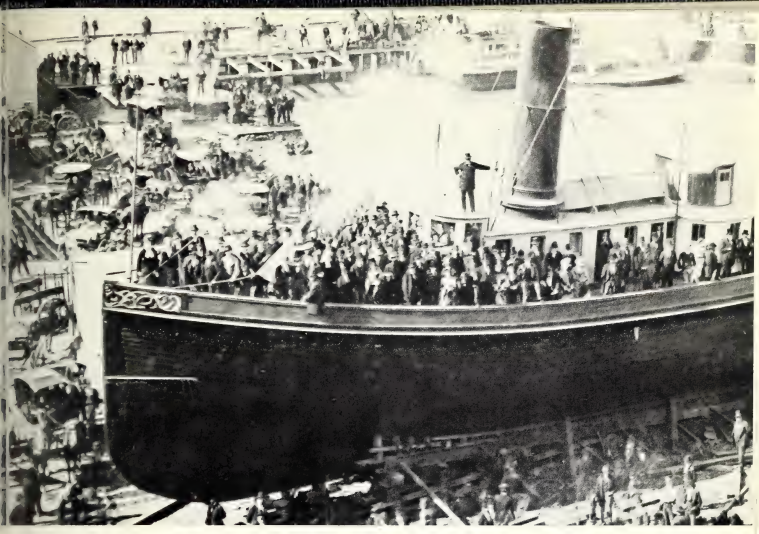


Plate 13: **Merchant's Dry Dock, Foot of Kearny, 1875 . . .** A hardy crowd gathered aboard and around the flag-bedecked tug Monarch on her launching day at Cousins' Shipyard. James C. Cousins was not only the master shipbuilder at this North Point yard, but was superintendent of the dry docks. At this time there were two floating docks on the site transected by the N-3 alignment. On the launching day of the Monarch there was a little two-masted schooner on the smaller dock to the right, with an even larger barkentine waiting her turn to be taken up. Among the other details visible in this remarkable view are the Merchants' Dry Dock Exchange Restaurant (and no doubt, saloon) at the left background, and the proud owner of the splendid **Monarch**, Millen Griffith, standing atop the pilot house. Four years later the docks were towed away to make room for the construction of the new seawall. (S. F. Maritime Museum)

This site is of considerable interest to us not only because of its proximity to both the N-5 contract area and the N-3 alignment but also because the site had what was, for San Francisco, a relatively long period of development during an important historic period. Two photographs, taken from the same vantage point, and dated 1864 by Berhman, show us a sandy shallow beach, a short steep bluff, a relatively shallow lagoon, and a sign on a small house indicating that Martin Vice was building boats on this relatively sheltered place on San Francisco's north waterfront. Plate 11 is the view looking towards North Point Warehouse, where clipper ships are pulled alongside the North Point Dock. The two small houses up against the bluff (labeled Spears Saloon by Berhman) appear on the 1877 manuscript map, as well as early coast survey charts, and so we know that we are looking at Montgomery Street in 1864, when it was a beach on the bay.

Plate 12 looks in the other direction (to the north) and there we see Martin Vice's boatbuilding shop, and a two-story frame building on a sand spit (that also appears on the 1859 Coast Survey Chart, Map 2).

The building of this dry dock had been a matter of great interest to the city and the Board of State Harbor Commissioners, who had agreed to provide almost free waterfront space for the dock on the south waterfront near Beale and Bryant with the proviso that the builders would construct two docks, one of about this size and one capable of lifting ships of 4,000 tons. But the undertaking of the stone graving dock at Hunters Point in 1866 led the Board to relieve the floating dock company of the burden of building the larger structure, which would have been in futile competition with the Hunters Point Dock, the port having no need of two dry docks capable of handling the comparatively few vessels of such size. The Union Lumber Association, which completed the floating dock in 1868, failed to place the structure in the planned location, but sold out to W. C. Ralston, Lloyd Tevis, **et al.**, of the California Dry Dock Company of Hunters Point, and the floating dock was removed to that location as an auxiliary of the stone dock.

In the meantime, the Merchants Dry Dock Company had completed the smaller floating dock, with a capacity of 700 tons. In 1869 this

operation also came under control of the California Dry Dock Company. The dry dock business was less than a great commercial success at Hunters Point, as high local rates for towboats and workmen encouraged ocean shippers to dock their vessels in the Far East and elsewhere. However, the small dock did a brisk business at North Point, averaging fifteen haulouts a month over nine years. An article in the San Francisco **Post** of October 28, 1876, stated that since its removal to North Point, the larger floating dock had also been doing much better business. The North Point site was a much more favorable site for "drop-in" trade than Hunters Point as the water there was sufficiently deep to permit flooding of the docks and entry of vessels at any stage of the tide and, in addition, it was a cheaper tow to this more convenient location. (For all of the above see H. Com. 1867-1879 as well as S. F. **Post** op cit.)

The dry docks were removed to the south waterfront in 1879 as the result of the encroachment of the new seawall on the site. During their tenure at North Point, the docks must have lifted well over 2,000 vessels, with the consequent production of a great quantity of waste. The way a floating dock was cleaned was simply to sweep the trash down into the bay. Unless the docks wound up "aground on their own beef bones" (as sailors used to say of laid-up ships), with it thereby having become necessary to dredge out the slips, the assorted trash of a dozen years of lively operation should appear on the site. It is extremely unlikely that any sweepings from the docks will add anything to our knowledge of shipbuilding or repair in the latter half of the 19th century. Articles of personal use or consumption may also be present in some quantity. The depth of water in 1857, long before the docks were installed on the alignment, was about 18 feet. It would appear from Map 4 that in 1877 the depth was about the same. The exact depth is rather critical from the archaeological standpoint, as it would appear that the bottom was at or below the invert profile of the projected sewer. Soundings on historic charts show the high points--controlling depths--in most cases. Two test borings close to the Merchants Dry Dock location made by Cooper-Clark & Associates in 1975 show bay mud at 37 feet and 40 feet--well below the invert profile. Historic information would suggest

Plate 15: Cowell's Wharf, Near the Foot of Union Street, ca. 1868 Seven clipper ships lie alongside this famous wharf or swing at anchor in the stream. In the foreground is the **Valparaiso,** with a sail-like advertisement of her coming departure for New York. **Plate 14: At the North Point Docks in the 1860's** Perhaps the most magnificent of the later clipper ships, the **Young America** lies alongside Issac Friedlander's Warehouse at the exact place where the N-3 alignment cuts through the site of this famous dock.

Plate 16: India Dock Area, Near the Foot of Green Street, ca. 1875 . . . The last vestige of the Old India Dock of 1857 remains in the form of the innermost wharf of this complex. The parallel pier at the center is the angled extension of Shaw's or Cowell's Wharf. The outer wharf providing a haven for the Italian fishing boat fleet, was an extension of the Front Street seawall. (views on this page, S. F. Maritime Museum)

Plate 17: The North Waterfront, 1877 . . . This lithograph would appear to be one of the more accurate of the popular birdseye views of San Francisco. The N-3 alignment will pass through the site of the Merchant's Dry Dock (1). The small dock to the right was called O'Neil's, and is on the line of Kearny Street--the site of the N-5 pump station. Sansome Street (2) was lined with warehouses seen in an earlier lithograph drawn by Gifford, plus some recent additions. Battery Street (3) extends back to the big smoke stacks of the Bay Sugar Refinery. (S. F. Maritime Museum)

the old bottom to have been at about 30 feet below city grade at the boring sites. Thus, the overburden of fill may here have depressed the bay mud, as it has done in other spots we have studied, with the result that materials deposited before filling will be below the depth of excavation. (San Francisco Department of Public Works)

Wharves and Warehouses (1858-1880): Moving south along the N-3 alignment from the Merchants Dry Dock operation, the sewer excavation passes through the outer berth of the Eureka Dock (Map 4). This dock, built in 1870, served the adjoining Eureka Warehouse. As shown by the heavy outline on Map 4 (and by contemporary photographs), it was a brick building probably used largely as a grain warehouse. Diagonally across from it was an almost equally new wharf (along Chestnut Street) and the warehouse of Isaac Friedlander, California's "grain king" of the 1860's and '70's. The Friedlander Warehouse was erected in 1868, at about the time that the export of California grain from San Francisco Bay to Europe was becoming a really big business.

A fuller description of the history of the old warehouses of the area will be found in the subsequent section of this report.

The alignment transects the busy shipping corner of the wharves along Sansome and Chestnut Street. The scene at this corner, when Friedlander's Warehouse was new, is shown in Plate 14. The clipper ship **Young America,** masterpiece of the famous builder William Webb, lies alongside the North Point Dock exactly where the dock will be transected by the N-3 alignment. Similar activity would be seen at the next "wharf corner" to the south, at the intersection of Lombard and Battery Street, adjacent to the Greenwich Warehouse.

The next of the 1877 "corners" transected by the alignment is a section running diagonally through a whole former block bounded by Battery and Front Street, and Greenwich and Filbert Street. This is the only place along the N-3 alignment where the line of the new Embarcadero encroached significantly on the old bulkhead line; in other places it generally extended the waterfront. This block (which appears as Block #623 on Sanborn Map DD and is discussed in the subsequent section of this report) was the site

of one of the more curious wharf developments on the San Francisco waterfront. Map 2 shows the odd-shaped trapezoid called India Dock extending from the line of Battery Street approximately to the N-3 alignment at one point in 1859 (actually 1856 survey date). South of the India Dock, extending outward from Battery Street, between Union and Filbert, this same chart shows Shaw's Wharf. Shaw's Wharf was not later extended directly eastward into the bay, as were the wharves to the south, but instead was constructed northward, forming a right angle. Now called Cowell's Wharf, this structure appears on the 1869 Coast Survey Chart, Map 3. On this chart the remains of the old India Dock have been mostly filled, leaving only the outer portion of the pier, running parallel to Cowell's Wharf. The N-3 alignment transects the north-south leg of Cowell's Wharf almost at its midpoint, as can be seen on Map 3.

Plate 15 shows Cowell's Wharf at about the date of the 1869 chart. The clipper ship in the foreground advertises itself as the "Valparaiso for New York." Such advertising banners, set roughly at upper topsails, were common for ships seeking a cargo. With the **Valparaiso** is a galaxy of Yankee clippers, the **Sumner, Sacramento, Lookout, Dashing Wave, Midnight,** and (anchored in the stream at the right) **Gold Hunter.** The view looks north across Union Street; the old Cowell's Warehouse is seen at the far left. In the shallows of the foreground are two scow schooners, one of them loaded with firewood. The N-3 alignment will pass through the area of this scene just behind the wooden warehouse on the wharf.

Plate 16 shows the same location in about 1875. The bulkhead wharf in the foreground is the remains of the India Dock. The wharf running parallel to the shore in the center is Cowell's Wharf. The outer wharf, that has by this time dog-legged around to form an almost completely enclosed basin, is the extension of the Front Street Wharf projected northward from the 1868 seawall. Bay and coastal schooners are seen in the basin, as are the spars of the lateen-rigged Italian fishing boats. At the right is the Union Street Wharf.

By 1877, the date of Map 4, this area appears to have been mostly filled, as can be seen in the excellent birdseye view of that date, Plate 17. This view is of great visual assistance in interpreting the accurate

Plate 18: Vallejo Street Wharf, 1863 . . . The wharf alongside the waterfront in the foreground, piled high with firewood, is the old "T" of Cunningham's Wharf. At the right is the Broadway Wharf with the handsome Sacramento sidewheeler **Chrysopolis** alongside. Between the Broadway and Vallejo wharves a dredger is at work. The large brick building in the right foreground is one of Daniel Gibb's 1853 Warehouses, which stands today on Front Street. (California Historical Society.

but sometimes slightly confusing 1877 map. In the right foreground is seen the Merchant's Dry Dock operation (1). Sansome Street (2), lined with its famous warehouses, runs between a cut-away block that contained the India Dock and Cowell's Wharf. This block still has a narrow passage for the entrance of small schooners but it appears that some filling is taking place. Whether shallow water or fill, this particular area between Greenwich and Filbert Street would appear one of the most promising sites along the N-3 alignment for the existence of substantial quantities of randomly deposited cultural materials accumulated between about 1867 and 1880.

The famous wharves of the north waterfront, as they appeared in 1863, are seen in Plate 18. The Vallejo Street Wharf is at the center, the Broadway Wharf to the right, and the Pacific Wharf at the far right. The Broadway Wharf has the famous Sacramento river steamer **Chrysopolis** alongside. The Oakland ferry that landed between the Broadway and Vallejo wharves, alongside the bulkhead, is barely visible over the wooden wharfside structures at the center. A dredger is at work in the slip between the Vallejo and Broadway wharves. The big brick building at the right is one of the two warehouses built by Daniel Gibbs in 1853 on Front Street. The wharf running parallel to the shore in the foreground is not Front Street but the remains of the T-shaped wharf called Cunningham's on Map 1 (1853) and Minturn's on Map 2 (1859). The N-3 alignment passes through the Vallejo Wharf about fifty feet outboard of the entrance arch to the wharf and passes just behind the location of the **Chrysopolis** at the Broadway Wharf. With regard to the possibility of deposits of artifacts of this period being encountered at the location seen in this 1863 photograph, it must be said that the depth of water required for the use of these slips by ships of the sizes seen here would imply continuous dredging to a depth below the profile of the projected sewer at these points. On the other hand dredging did not of course take place under the piers or within two or three feet alongside them, the likeliest location for the casual loss or disposal or materials.

Between the Pacific Street Wharf and Jackson Street (the end of the N-3 alignment), Map 3 (1869) shows a situation similar to Map 2 (1859).

The north half of the block was a shallow slip, the south half was built over. With the completion of the old seawall in 1869, the whole of this block was filled. The possibility of cultural materials being present in this fill would appear to be reasonably high, but there is no evidence to suggest the presence of any deposits that would meet the criteria for registration as a historic site or that would significantly add to our knowledge of the cultural or technological knowledge of the period.

The N-5 Pump Station Site: With regard to the N-5 site, it was under water at an unused portion of the waterfront during most of the period. The earliest record we see of development that may have left cultural remains is found in the 1877 birdseye view (Plate 17). The waterfront street in the right foreground of this view is Bay Street. Between the dry docks (1) and the offshore rock to the right of them is a small pier that appears to be about on the line of Kearny Street. The excavation for the pump station may encounter remains of this wharf and lost or discarded cultural materials associated with its use. This wharf we also find identified on the Sanborn Index Map of October, 1877. It is here called O'Neil's, and if this comparatively rough index sheet can be taken as a sound geographical guide, the wharf would lie at the west curb line of Kearny Street between Bay and North Point Street.

Plate 19: A Panoramic View of the N-3 Alignment, ca. 1883 . . . Five sections of this six plate panorama are analyzed at length in the text that follows. Washing strung out beside the Sea Wall Hotel (1) marks the site of the N-5 pump station on Kearny Street. The N-3 alignment follows the line of the graveled and planked roadway along the seawall, past the big bark (2) and the roof tops of the warehouses (3). It ends in the congested shipping in the last plate at the lower right. While the close-up sections show the N-3 and N-5 areas in detail, the first section (upper left) shows sweep of the N-2 and N-1 alignments out to Black Point. (Wells Fargo History Room)

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LATE NINETEENTH CENTURY . . . 1880-1906

The City Front in the 1880's: It is fortunate for the historian of San Francisco's waterfront that Telegraph Hill proved to be an irresistible attraction as the proper place to catch on silver (in the 1850's) and on glass (in the 1880's) the broad sweep of the harbor, the comings and goings of the ships of the world, and the busy activities of the waterfront itself. The result is a series of photographic panoramas to pick and chose among, to record both the changes in particular views, and to study the waterfront at important periods of San Francisco's history. We have chosen this fine six-part panorama taken before March of 1884 from the collections of the Wells Fargo History Room to demonstrate the changes that had taken place along the N-3 alignment and the N-5 contract area with the supporting 1887 Sanborn Insurance Company maps of the identical areas (Maps AA through GG).

The economy of San Francisco's waterfront in the mid-1880's was vigorous indeed. The first section of the panorama (Plate 20) looks southwest from the 250-foot rise of Telegraph Hill as the wind from the west catches the smoke from Spreckel's seven-story sugar refinery (10) and the darker plumes from a coastal steamer and the departing Oakland ferry. The view is of the warehouse and wharf district that was the heart of San Francisco's commerce in the 1880's. Spreckel's ships from Hawaii delivered the sugar for refining directly into the Union Street Pier (1) and the Green Street Pier just to the south. The Dunsmuir steamships, the **Barnard Castle** and **Hylton Castle,** were importing coal from Departure

Bay in British Columbia to the foot of the Jackson Street Wharf.

The most important export for San Francisco in the 1880's was wheat. The 20,000- to 40,000-acre spreads of the fertile San Joaquin and Sacramento valleys were producing a hard winter wheat--California White Velvet—that shipped well, was especially suited to the milling practices of Europe, and produced such fine flour that wheat became the "green gold" of the 1880's. Considering that only thirty years had passed since the gold rush, the extent of this new-found gold was remarkable indeed. "By 1860 California was producing 6,000,000 bushels a year on 271,000 acres; by 1870, with world wide commerce freed of the restraints of the Civil War, 16,000,000 bushels on 1,479,000 acres; by 1880, 29,000,000 bushels on 2,500,000 acres; and by 1890, 40,000,000 bushels on more than 2,750,000 acres. . . . while it lasted the boom of the 1870's and 1880's had made California the largest wheat exporting region in the world." (Watkins 1973: 188)

A score of big square-rigged ships can be found in this six-part panorama. These ships are all as big or bigger than the clipper ships developed for the California trade in the early 1850's. Yet even at the height of the gold rush there would never have been anywhere near this number of ships of this size in the harbor at one time. No fewer than 559 sailing ships assembled in San Francisco Bay to load a single grain harvest, that of 1886. (**Alta** 1886: **passim**) These vessels were much larger than those of the gold rush days, and the flotilla at a given time was much larger, in no time during the gold rush did 559 vessels pass outbound through the Golden Gate in a single year.

The sailing ships in this panorama are mostly European iron and steel ships. They have sailed from London and Antwerp and other ports to San Francisco with coal as the largest single bulk cargo, but also carrying general merchandise. They will all return with grain, leaving California merchants, warehouse owners, stevedores, drayage operators, and farmers a fine share of profits from this continuous exchange.

The Sanborn maps AA through CC match Plate 20 so that it is possible to see precisely where the N-3 alignment begins on East Street at Jackson and at the same time see the structures as they were just

MAP AA
Sanborn, 1887
Washington to
Pacific Street

STREET
THE
SEA
PACIFIC ST.
Inez
Noble
Harvard
CLARK
ANCON HO.
Bethel
JACKSON
N.T.H. PACIFIC HO.
DRUMM
NEW HENRICO
OREGON
R. D. CHANDLER'S
COAL YARD
EAST ST.
WASHINGTON

Plate 20: Looking South from Telegraph Hill, ca. 1883 . . . The identified points discussed in the text in this southernmost part of the panorama are: the Union Street Pier (1); the end of the seawall Section 4, marked by the small house (2); Filbert Street, ending at (3), next to the big American Sugar Refinery Melting House; the Flint, Peabody Warehouse (4), at Greenwich and Battery; the roof of the top of the Battery Warehouse Group (5); the edge of the Pioneer Warehouse (6), with its sister, the Union Warehouse (7). From the summit of the 250-foot Telegraph Hill (8), we are looking down on Cowell's Warehouse (9), and dimly seen in the smoke is the six-story American Sugar Refinery (10). Off in the distance (11), is the old Ferry Building, marked by its long shed. (Wells Fargo History Room)

three years earlier in the photographic panorama.

Washington Street to Broadway, Sanborn Map Section AA: Block #1 on Map AA is typical of the waterfront life to the south. No fewer than five saloons round the corner from East Street to Washington Street, where sailors' boarding houses look out on R. D. Chandler's Coal Yard and Charles W. Smith's steamship copper smithy. A Chinese laundry and a "Chop House" supplied the luxuries of freshly ironed shirts and the finest fast food that sailors, used to the ports of the world, had come to appreciate.

The beginning of the N-3 alignment makes a jog out to within 50 feet of the Jackson Street Wharf, the location of the **California Transportation Company's** 558-foot freight receiving and shipping shed. The California Transportation Company is listed in the city directory as early as 1870 on the Jackson Street Wharf, where it continued to do business through 1907. Andrew Nelson was the first president and Nils Anderson the company secretary and later president of the line that was the principal operator of sternwheel steamboats on the bay and the rivers. It may be considered the successor to the California Steam Navigation Company of the 1850's and 60's. At the height of the grain trade its steamers and barges were the only competition to the Southern Pacific railroad monopoly in bringing grain from the central valley to the docks and warehouses of San Francisco.

Directly opposite the Jackson Street Wharf, **R. Dunsmuir and Sons** occupied the main part of Block 6A, within 20 to 100 feet of the N-3 alignment. Robert Dunsmuir was a Scottish mining engineer who immigrated to Vancouver, British Columbia, where he started the Wellington Colliery at Departure Bay, 3-1/2 miles north of Nanimo. It was opened in 1870 and yielded more coal and profit than any other coal mine of the Pacific coast. Dunsmuir, Diggle and Company sold about half of their British Columbian coal to San Francisco and the rest to the Hawaiian Islands. (Hittell 1882: 309) Undoubtedly, the coal, imported on their own steamships to this yard opposite the Jackson Street Wharf, was in turn sold to the Pacific Steamship Company on the adjoining Block

#1515 to fuel their steamers. A small two-story frame office fronts on the seawall (Embarcadero) with scales out in front in the street to measure the sales of the incoming coal.

At the time of this Sanborn map, city directories list Robert and James Dunsmuir as residents of Victoria, British Columbia, and show Alexander Dunsmuir in residence at the Pacific Club. Less impressive residential addresses of the times would be at either end of the Dunsmuir Coal Yard—the North Pacific Hotel on the corner of Jackson and Drumm, and the Ancon Hotel (named for one of their steamers) at the corner of Pacific and Jackson. These are both modest two- and three-story frame buildings—the Ancon had a kitchen below and sleeping quarters upstairs. Small one- and two-story frame shops line Jackson Street and continue around the corner on Pacific. Roofed planked porches extended out into the streets. An idea of what they looked like can be gained by noting the frame buildings with the laundry strung out on the roof as seen on Plate 20 between figures 3 and 6.

From Pacific Street to Broadway, the N-3 alignment passes by small offices built on the Embarcadero to handle the coming and going of freight from the wharves. Scales are shown on the small triangle of land just in front of the **Pacific Steamship Company's** repair shop on Block #1515. A collection of one-story frame buildings house a blacksmith, facing Drumm Street, a ship-carpenter shop along Davis Street, and a machine shop at the corner of Broadway and Davis, as well as storerooms, joiner's workshops, oil rooms, and offices on Broadway. The large center yard (about 350 feet square) was used for storing coal and the Sanborn agent noted that the nightwatch man carried "mineral sperm oil in lanterns" on his night rounds. The Pacific Coast Steamship Company operated the wooden sidewheelers **Orizaba** and the **Ancon** from the Pacific Street Wharf in 1882. "They sailed every five days down the California coast touching at Port Harford, Santa Barbara, San Pedro and ending their trips at San Diego; and the **Los Angeles**, a wooden propeller, left San Francisco at intervals of 7 days touching at Santa Cruz, Monterey, San Simeon, Cayucos, Gaviota, and Santa Barbara, terminating her trip at San Buenaventura. . . . Besides these passenger steamers there were several freight steamers . . .

MAP BB
Sanborn, 1887
Broadway past Vallejo

SEC. 5

SEA WALL

VALLEJO ST. WHARF

PACIFIC TUGBOAT COS FREIGHT SHED

SEC. 6

BROADWAY WHARF No 2

PACIFIC COAST STEAMSHIP COS FREIGH

WALL

BROADWAY

SEA WALL

824

BROADWAY

VALLEJO ST

Idaho and **Geo. W. Elder** . . . from San Francisco to Olympia, and on the way touched at Victoria, Port Townsend, Seattle and Tacoma." (Hittell 1882: 201)

The Pacific Coast Steamship Company was the direct rival to the Oregon Steamship Company, which operated only six vessels in competition to the Pacific Coast's 14-ship fleet. The rate fight between the two companies made for bargain trips at $7.50 each way for a five-day round-trip between Portland and San Francisco. The rivalry was almost ruinous to the two companies, who finally declared a truce. But everybody was after the lucrative coastal trade in the 1880's. The Pacific Mail sold the big steamer **Great Republic** to P. B. Cornwall of San Francisco, who offered a price of seven dollars first class and two dollars steerage with freight at a dollar a ton—forcing the Pacific Coast and her rival to do the same. "Thousands of happy tourists flocked to the waterfront, carpet bags in hand, for it was much cheaper to travel on the coastwise liners than to stay at home in dull boarding houses. The **Great Republic** could cram aboard more than eight hundred of them to a voyage with the result that even the ridiculously low fares more than paid the high cost of her operation." (Newell & Williamson 1959: 25-26)

Broadway Wharf to Green Street Wharf, Sanborn Map Section BB: Map BB shows the extent of the Pacific Coast Steamship operation in 1887. The company was started in 1877 and continued to operate from the Broadway wharves as late as 1907. Charles Goodall, Master Mariner, started the company and was still president in 1892. His son, Edwin Goodall, was president in 1907, and through the end of its lucrative coastal business in 1914. (Langley & Crocker 1877 through 1915)

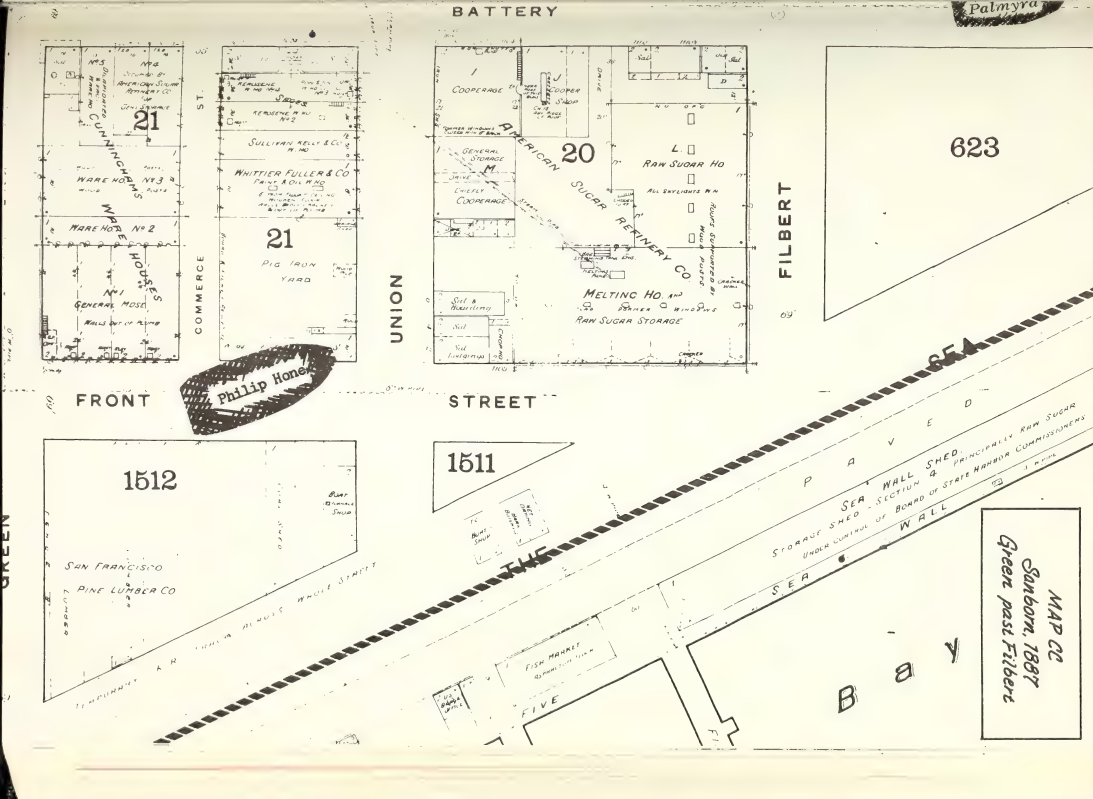
In 1887 Block #624 was vacant. Directly in back of it on Davis Street (just off Map BB) is the **United Seed Company** brick warehouse, portions of which date before the fire of 1906, and the **Albers Milling Company** building, erected in 1927. These are of some interest in that they are just over 200 feet off the N-3 alignment and the United Seed Company is a potential candidate for landmark status.

The Vallejo Wharf and the Green Street Wharf appear in Plate 20

just south of the figure 9, congested with shipping in the 1884 panorama. The Vallejo Street Wharf had a short shed for the Pacific Tugboat Company's operations and the Broadway Wharf beyond was covered with the Pacific Coast Steamship Company's shed. As can be seen from the photograph and map combination, these sheds were nothing like the massive plastered arches that hide the bay from San Francisco today. These were low, long (500-700 feet) one-story sheds to keep the wind and rain off the passengers and freight. Very small frame offices for handling the drayage and freight business dotted the top of The Embarcadero, shown on our map as "The Seawall Section 5."

Green Street to Filbert, Sanborn Map CC: Map CC of the 1887 Sanborn maps records the left half of the Plate 20. **Cunningham's Warehouse** (9) was on the corner of Front and Green Streets, about 300 feet from the N-3 alignment. Cunningham's was built in 1850 at the corner of Green and Front Street when Cunningham's Wharf marked the city front. In the photograph a number of small scows and schooners appear to be pulled right alongside the Sea Wall Section Five at the foot of the Green Street Wharf. Cunningham's big stone warehouse stretched for 130 feet along Front Street and the first section was 24 feet tall. The later sections behind (not visible in this panorama) were only 10 feet high. The sections marked Warehouse #4 and #5 were on Battery Street. The American Sugar Refinery Company occupied #5 at this time and the Sanborn agent has noted that the condition of #4 is "dilapidated" by 1887. Cunningham's was still listed in operation in the city directory of 1894, but by 1895 was no longer listed. In 1892 the Cowell Cement Company built a warehouse on that section of Block #21 that had been a coal and pig-iron yard in 1887. This warehouse was destroyed in the 1906 earthquake but was rebuilt by Cowell in an almost identical manner. The structure still remains and is used by Pacific Telegraph and Telephone for truck storage, and is about 225 feet from the N-4 alignment. It is worthy of landmark status in San Francisco.

The seawall lot directly in front of Cunningham's Warehouse on Block #1512 was used in 1887 by the San Francisco Pine Lumber Company


BATTERY
Palmyra
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21
20
623
1512
1511
COMMERCE ST
UNION STREET
FILBERT
FRONT
Philip Hone
COOPERAGE
RAW SUGAR HO
AMERICAN SUGAR REFINERY CO
MELTING HO
RAW SUGAR STORAGE
GENERAL STORAGE
SUGAR
SWEET COOPERAGE
WAREHOUSES
MARE ISLAND
PIG IRON YARD
SULLIVAN KELLY & CO
WHITTIER FULLER & CO
SAN FRANCISCO
PINE LUMBER CO
PAVED
SEA WALL SHED
STORAGE SHED - SECTION 4 PRINCIPALLY RAW SUGAR
UNDER CONTROL OF BOARD OF STATE HARBOR COMMISSIONERS
SEA WALL
THE
FISH MARKET
FIVE
Bay
MAP 02
Sanborn, 1887
Green past Filbert

as an open storage area convenient to the foot of the Union Street Wharf. A coal shed and a small boat shop fronted on Union Street. About fifty feet from the N-3 alignment the old Fisherman's Wharf Market, a one-story frame building, handled the cod, herring, and crabs that were brought in by the felluca boats of the Italian-American fishing fleet. And it is here that the Sanborn 1887 map is updated from our 1883 panorama as the two piers, each labeled "Fisherman's Wharf," were added sometime after 1884 and before 1887. The Union Street Wharf (I) is the pier to the far left of Plate 20, and the fishing fleet is nowhere to be seen at that time. Plate 28, in the Appendix, shows us a later picture taken out on the piers at Fisherman's Wharf, looking back at Sea Wall Section Five and the fish market. See the Appendix for a full account of "San Francisco's Fishermen" taken from contemporary newspaper accounts.

In the street itself (almost on top of the N-3 alignment), opposite the old fish market, were piles of drying nets and a small boat shop. On Front Street in Block #20 some two-story frame buildings contained a saloon with lodgings, another saloon, and a saloon and boarding house. A "chop house" on the waterfront side probably employed the few Chinese that worked in the area, as the big American Sugar Refinery that dominated the scene employed "226 men and boys and no Chinese." A laundry on Washington Street was also labeled "Chinese." The anti-Chinese feeling that ran so high in the late 1870's continued to crowd their cheaper labor out of the market in large industries but ironically forced them into owning the small businesses, chop houses, laundries, grocery shops, tailor shops, and the like that eventually turned the working-class Chinese families of the late 1800's into prosperous middle-class merchants after the first World War.

The rest of Block #20 was occupied in 1887 by the **American Sugar Refinery** whose main building is just off Map CC, to the left, on Union and Battery and can be dimly seen (10) in Plate 20 just under the embankment of Telegraph Hill. "The **Bay Sugar Refinery** [later known as the American Sugar Refinery] have erected at the corner of Union & Battery extensive works for refining sugar. The building is seven stories high, covers a lot 50 feet in front with a depth of 130 feet and is one

of the most substantial in the city. The machinery is the latest and most improved patterns and the capacity of the works is 5,000 pounds a day. Raw material is imported from China and the Sandwich Islands." (Langley 1864-65: 8)

By 1887, the big sugar refinery occupied Blocks #5, #20, and part of #21. Various early accounts indicate that the two buildings on the north side of Block #35 were the first built. The 1857 Coast Survey (Map 2) indicates the presence of a warehouse associated with Shaw's Wharf which was later known as Cowell's Wharf. 1854 accounts described **Cowell's Warehouse** at the northeast corner of Union and Battery. Plate #20 clearly indicates Cowell's Warehouse (12) had not yet been enclosed by the sugar refinery. Interestingly enough, a detailed note on the 1887 Sanborn Map CC shows the cooperage at the corner of Battery and Union contained a side wall with "former windows enclosed with an 8 inch wall."

The Bay Sugar Refinery at the corner of Battery & Union first lists Herman Meese as the president but Hittell notes "that this was in the hands of a corporation of which Claus Spreckels was the President. . . . Claus Spreckels, who has made a national reputation as one of the prominent business men and self-made millionaires of California, is a native of Hanover, and in 1882 is 53 years of age. He crossed the Atlantic in 1848 and made his home in Charleston, S.C., where he became a clerk in a retail grocery store." (Hittell 1882: 547) After five years in a Charleston grocery store Claus immigrated to California and parleyed a grocery store into a brewery, a brewery into the Bay Sugar Refining Company, which in turn invested heavily into Hawaiian sugar planting on the island of Maui, incorporated the Hawaiian Commercial Company with four huge sugar mills on the island that produced 200 tons of sugar a day, and eventually built still another big sugar refinery in the Potrero that covered three acres by 1882. The "sugar king of California" introduced the production of sugar beets in the Watsonville area in 1888 and the family holdings then included the Oceanic Steamship Company that operated out of San Francisco to the Far East and Hawaii. (Hittell 1882: 547ff) The city directory listings for the Spreckels family in 1892 show Claus Spreckel as the president of the California Sugar Refinery, Adolph

B. Spreckels as vice-president of the Spreckels Company, and August Spreckels as, simply, "Capitalist, residing at the Palace Hotel."

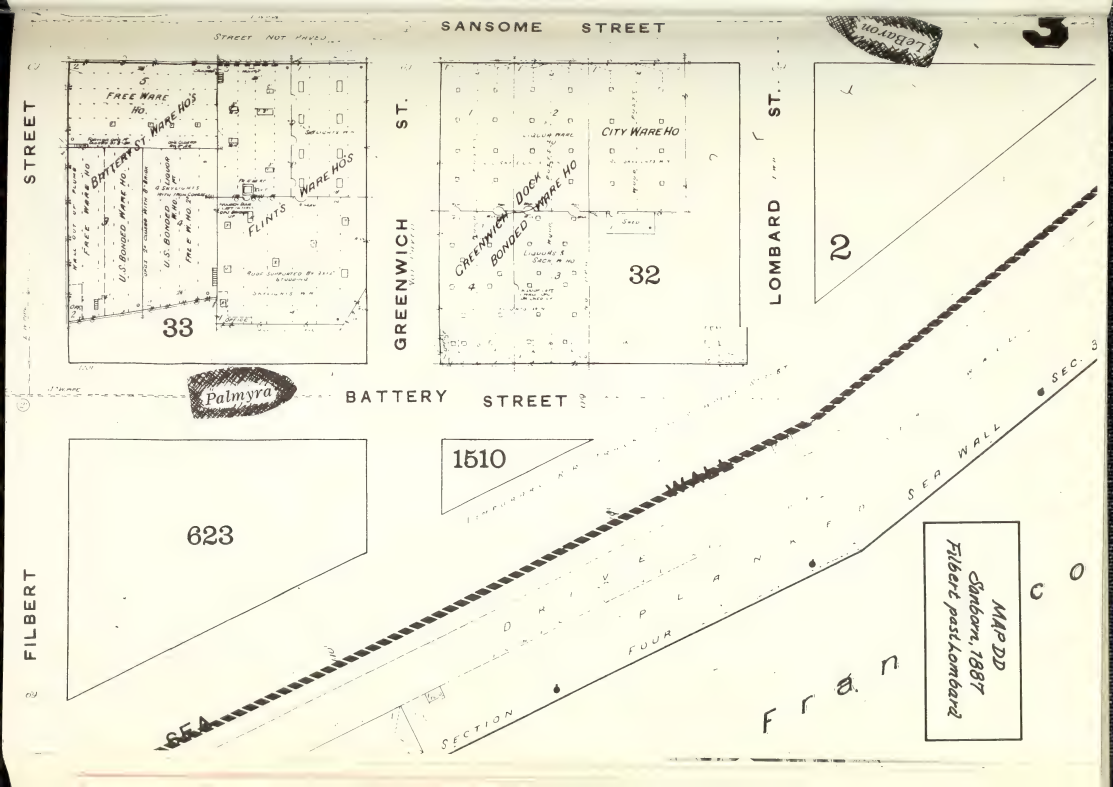
The sprawling brick buildings of the American Sugar Refinery of 1887 were destroyed in the 1906 earthquake. The sites are marked by the Sperry/Abbott tower at the corner of Front and Union, built in 1915, and the Ice Houses on Union between Sansome and Battery that were built in 1914. The Spreckels' continued their extensive family business elsewhere.

Directly in back of the American Sugar Refinery on Block #20 was the **Union Warehouse** (7 in the photograph) and the **Pioneer Warehouse** (6). The Union Warehouse, as can be seen, was a substantial three-story brick warehouse that is shown on the Sanborn Map DD to have four interior sections separated by fire walls. The two-story Pioneer Warehouse was unusual in that it was built of rubble. Both buildings were constructed in 1852 on land that was filled and extended out from the original natural shoreline. Although both warehouses were over 400 feet from the N-3 alignment we are interested in them because their early appearance on the 1853 Coast Survey adds to our knowledge of the rate of filling in and building up of the land between the natural shoreline and The Embarcadero. Neither gold rush warehouse stands today--the Union Warehouse burned in 1906 and all but one wall of the Pioneer was destroyed in 1954. Dow comments, "In 1850, Telegraph Hill rose abruptly from the waters of San Francisco which lapped at the foot of its northern and eastern slopes, while the base of its southern slopes was buried in dunes of sand. By 1853 (the year after the origin of the Pioneer and Union Warehouses) a sizable amount of fill had been placed along the hill's eastern shore, pushing back the bay and providing level ground for building sites. Filling was limited (in later years) and sporadic here for many years. Even after the completion of the new seawall along this section of the waterfront in the mid-1880's, it was not until about the turn of the century that the area inside the wall was completely reclaimed. The exact source of fill material used along this part of the waterfront is difficult to determine." (Dow 1973: 60)

The problem of constructing the early brick warehouses of the gold

rush period was important enough to occupy the attention of the city directory editor for the years 1852-53. First he comments, the "constant and long continued inpouring of merchandise, from all quarters of the world, had by this time (1851) filled the market to repletion. In all parts of the State the storehouses were crammed with goods." He goes on to describe the great fire of May, 1851, and the realization that "substantial brick and iron structures intended to be fire-proof, melted away before the avalanche of flame." Still, brick walls did intervene in the path of later fires (November 1852) and brick warehouses with iron shutters were the best protection money could buy. The problem of building on San Francisco's bay mud remained. When the first public brick building opened in San Francisco--the American theater--the walls sank one- or two-inches. "The sub-stratum on which the sand had been deposited, consisting of soft, yielding mud, many doubts were expressed as to the safety of the building." Whether doubts about building on bay mud were sufficiently expelled by only a one- or two-inch subsidence, or whether the urgent need for protection for the commercial goods over-rode whatever fears the builders and the merchants shared, the building of big masonry warehouses close to the ships that brought the goods continued. "By the summer of 1852, the bay section of the city was studded over with storehouses of solid masonry, which would have done credit to any city in the world. . . . The sand hills of Happy Valley were literally almost leveled and cast into the sea, and the rocky hill at Clark's Point (the foot of Telegraph Hill) was rent to pieces and subjected to the same fate. . . . In fact, the year 1852 witnessed a greater progress in the substantial and permanent improvement of the city, than any previous year." (Parker 1852: 18-20)

More information exists about the nature of the earlier filling of land between the natural shoreline and the old bulkhead line than about the filling at a later date. Our 1883 photograph shows a line of whipping white clothes (3) in the waterfront breeze directly over Block #623. Prior to the construction of the seawall this block extended out to Front and Greenwich Streets, and it was at least partially filled before the seawall was cut through it and fill of The Embarcadero dumped on top of whatever


SANSOME STREET
STREET NOT PAVED
STREET
FREE WARE HO.
BATTERY ST.
WARE HOS
FLINTS
U.S. BONDED WARE HO.
33
GREENWICH ST.
CITY WARE HO
GREENWICH DOCK
BONDED WARE HO
32
LOMBARD ST.
2
Palmyra
BATTERY STREET
1510
623
FILBERT
564
SEA WALL
SECTION
MAP DD
Sanborn, 1887
Filbert past Lombard
San Francisco

fill was already in place. This is the only block of the old waterfront in this area that extended beyond the revised waterfront line of the present-day seawall Embarcadero.

The 1887 Sanborn Map CC shows Block #623 as the cut-through triangle of land. The 1895 block map lists Luning and Company as the owner of this parcel. In 1898 the Pacific Preserve Company manufactured pickles and sauces at 1200 Battery, the address of this seawall lot. The Water Department records for 1905 indicate that a number of small frame buildings on this parcel were used for a vinegar and pickle factory with wine "rooms." At the same time there were also wood-drying buildings and a coke shed. However, after the earthquake the Pacific Preserve had been moved to Howard Street and the Whittell Warehouse was listed at 1200 Battery--a building torn down in the 1970's.

The top right-hand corner of the Sanborn Map CC shows the beginnings of the long seawall shed 4 that was used for storing raw sugar in 1887. The shed ran 650 feet along the top of the seawall next to the bay, and ships could pull right alongside. The shed was owned by the Board of State Harbor Commissioners in 1887 but this section had not been built by the time of the 1883 panorama. The very small house (1) marks the end of the seawall at that date--directly in front of the American Sugar Company Warehouse (3).

Filbert Street to Lombard, Sanborn Map DD: Plate 21, the next part of our panorama corresponds to Sanborn Map DD. Here between Goat Island and the seawall eight big sailing ships of the grain fleet are seen. The number is indicative of the immense size of this trade. Alongside the seawall lies a Downeaster--the Maine-built wooden sailing ship that was the successor of the clipper ships of the gold rush period (1). A second vessel of this type is seen out in the stream to the left, with a third of her type anchored further out. The other ships at anchor are iron or steel foreign vessels. At the right is a three-mast bark with her foretopmast sent down, perhaps a casualty of the Cape Horn navigation. The vessels in this picture are of about 1,500-1,800 tons, about the same size and vintage as the San Francisco Maritime Museum's ship **Balclutha,**

presently berthed near Fisherman's Wharf. Directly astern of the Downeaster alongside the seawall is a South Seas trading schooner, her fore gaff rigged for unloading the produce of the islands. Anchored out beyond her is a typical two-masted schooner of the Sonoma and Mendocino Coast redwood lumber trade.

The lower right hand corner of Plate 21 shows part of a shed used in Flint's wool operation at the southeast corner of Greenwich and Sansome (3). The **Flint Peabody Warehouse** was a two-story brick warehouse 60 by 125 feet that faced on Sansome Street when it was built in 1854. Plate 7 gives a clear view of Flint's operation when Battery Street was the back door to the bay. "Two San Francisco merchants, Alfred Peabody, who originally was from Salem, and J. P. Flint, from Boston, grasped fully the significance of the fast passages of the **Samuel Russell** (New York to San Francisco, January 1850, 109 days), and **Sea Witch** (New York to San Francisco, April 1850, 97 days), and Peabody took passage to Boston in the summer of 1850 via the Isthmus. He arranged with the Boston firm of Glidden & Williams to establish a line of clippers, and placed the order for the first, the **John Bertram**, with R. E. Jackson of East Boston. The **Bertram** was launched in December 1850, 61 days after the keel was laid." (Lyman 1957: 49) Sanborn Map DD shows a much larger operation that had grown around the old gold rush structure. A one-story brick warehouse had been added that extended the warehouse group to Greenwich Street and another 14-foot brick warehouse was built across the bay side facing on Battery Street.

The **Battery Street Warehouse** (first known as (Griffing's) is just off the photographic panorama with only a tip of its roof indicated on Plate 7. Frederick Griffing built a warehouse on Battery Street in 1852. By 1887 the Sanborn agent noted that "the wall is out of plumb" on the Filbert section of what would have been the original gold rush structure--about 60 feet across the slanted front and 150 feet deep (shaded portion). Also noted along the back wall, "former original wall openings closed by 8" brick."

By 1887 the Battery Warehouse group measured 140 feet by 240 feet with its unusual slanted front towards Battery Street. The city

te 21: **The Sailing Ships of the Grain Fleet, ca. 1883** . . . A big Downeaster (1) lies alongside planked road atop the seawall (2) where a pile driver is at the edge of block 623. The tip Flint's Warehouse (3) can be seen at the corner of Greenwich and Battery. The Greenwich ck Bonded Warehouse (5) faced on Battery Street. The smaller warehouse (6) was later called City Warehouse. Lombard Street (7) ran alongside some sheds out to the seawall. Section f the seawall (8) was topped by a long grain shed by 1887. (both views, Wells Fargo History om)

te 22: **Unloading the Bark at the Seawall, ca. 1883** . . . The planked drive (1) that ran the gth of the seawall made it possible for drays and wagons to handle cargo right from the ship the warehouses. As can be seen by the big puddle (2)--the site of the Belt Line Roundhouse, ay—not all of the land behind the seawall had been filled. The roof of the North Point Dock iin Warehouse (3) can be seen at the corner of Chestnut (4) and Sansome. Block 1508, bounded Chestnut and Francisco (5), was still unfilled.

directory of 1885 lists this building as "the Battery Street Free and Tea, Bonded," being operated by Bode and Searle. On the Sanborn Map the agent noted that liquor was stored in the bonded sections. Bonded warehouses, at that time, were under the supervision of the United States government which kept store-keepers of its own in charge all of the time. These watchmen were under heavy bond to the government for overseeing goods placed in bonded warehouses. The goods tended to be in a class we would call luxury—silk, opium, and tea from China, wines and brandies from France--in short, those items that deserved a watchful eye.

Nothing remains of Flint's or the Battery Street Bonded Warehouse today but the corner of Filbert and Battery (3 in our photograph) has a handsome brick warehouse belonging to the Italian Swiss Colony Company that was built in 1903 on Flint's woolen yard property. This structure is within 250 feet of the N-3 alignment and has been proposed as a candidate for landmark status in San Francisco. The building will be preserved in the north waterfront development projected by Levi Strauss and Company.

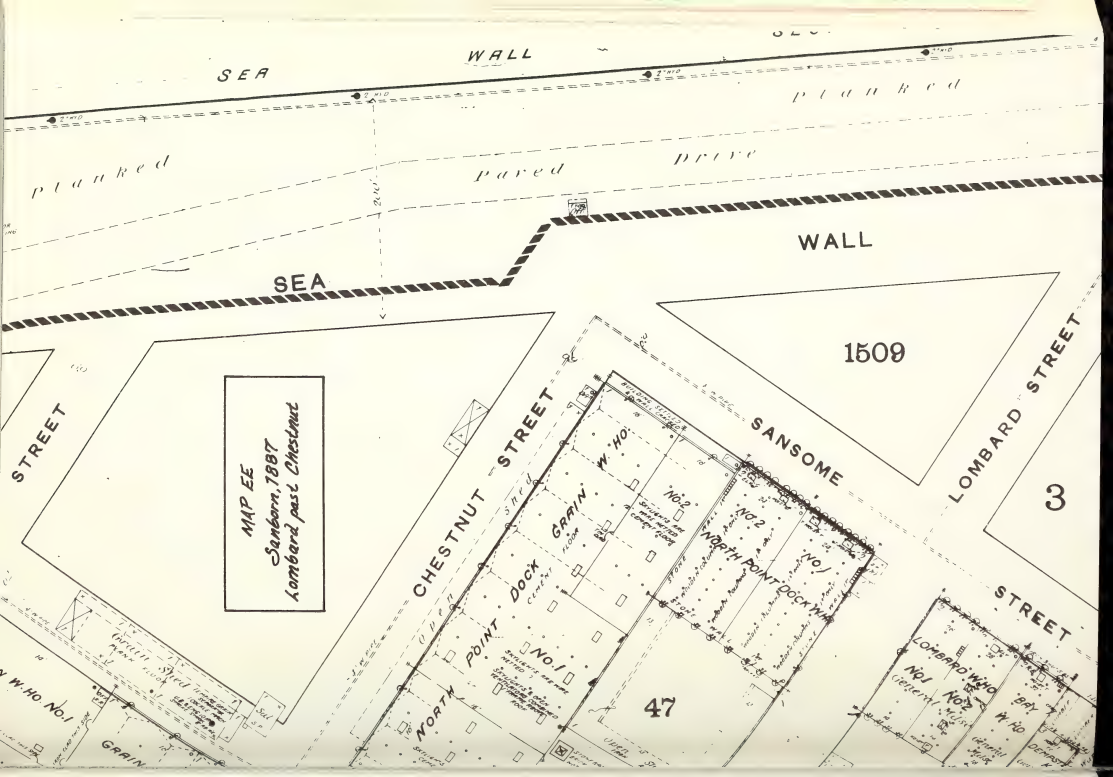
Directly across Greenwich Street (5 in Plate 21) is the roof of the **Greenwich Dock Bonded Warehouse** and the **City Warehouse** (5 and 6 in Plate 21). An early stereoptican view taken by Carlton Watkins in 1864 shows the two back sections on Sansome Street of the Greenwich Dock Warehouse and the City Warehouse in place and receiving goods from the Lombard Street Wharf at that time. The first city directory listing for these two brick warehouses was in 1861-62. By 1885 the big bonded warehouses were operated by Bode and Searle and used for storing liquor and sack, or sherry. The addition of two newer sections on Battery Street meant that the Greenwich Dock Bonded Warehouse measured 275 feet from Battery to Sansome and 140 feet along Sansome. The City Warehouse, part of the same group, measured 90 by 150 feet along Sansome and Greenwich with a receiving shed facing an open yard on Lombard and Battery—the usual corner saloon is just 75 feet from the N-3 alignment. Both warehouses were still intact in 1914 as part of the Haslett warehouse interests. According to the San Francisco Maritime Museum research one north wall of the Greenwich City Warehouse is standing in 1976 and two arches of this building are to be incorporated into a future development.

The City Warehouse section was operated by Howard and Poole in 1868. Benjamin Howard was also proprietor of the North Point Dock Bonded Warehouse (Sanborn Map EE) and the Oriental Bonded Warehouse (which still stands intact near the C-3 section of the alignment on King Street). His partner in the warehouse business was I. Lawrence Poole. By 1892, the City Warehouse was operated by Henry Cowell and it survived the 1906 earthquake but does not appear in the city directory of 1915. In 1901 **Merchants Ice and Cold Storage** was built for the Union Can Company, to make cans for fruit and salmon packing, on the northeast corner of Block #32. This large brick warehouse lies within 150 feet of the N-3 alignment and is a potential candidate for landmark status in San Francisco.

Lombard Street to Chestnut, Sanborn Map EE: Plate 21 shows us what is probably an English bark of about 1,000 tons and 180 feet long. The condition of her bow indicates that she has not yet been cleaned up from a sea voyage of four months or more and is therefore discharging cargo rather than loading. Teams of horses wait for the big open drays and smaller covered wagons to be filled up. Barely visible against the dark background a donkey engine is being used to hoist what must be very heavy large hogsheads. Hundreds of wooden kegs and barrels are already unloaded on top of the planked Sea Wall Section 3 that extended from Lombard to Francisco Street. A horse and wagon team heads down Chestnut Street to remove her cargo. While we can only guess at what might be contained in those kegs and barrels, boxes and hogsheads, we can be almost certain that the bark will be loaded up with grain from either the North Point Dock Grain Warehouse (3) or the Eureka Warehouse (not visible in our panorama but just a few hundred feet down the road on Chestnut and Montgomery).

This 1883 photograph clearly indicates the stage of the fill on seawall lot 1509 (2) which appears as a large puddle. The small frame building (4) is not on a paved road but instead rests on a planked roadway through the sandy, uneven waterfront. Block 1508 on the 1887 Sanborn Map EE would be about at the larger puddle (5).

The **North Point Dock Grain Warehouse** is only indicated by the


SEA WALL
planked
paved drive
planked
SEA WALL
1509
LOMBARD STREET
STREET
MAP EE
Sanborn, 1887
Lombard past Chestnut
CHESTNUT STREET
SANSOME
W. HO.
NO.2
NO.2
NO.1
GRAIN
DOCK
NORTH POINT DOCK WH.
NORTH POINT
NO.1
47
3
STREET
LOMBARD WHO
NO.1
NO.2
W. HO.
W. HO. NO.1
GRAIN

corner of the roof in Plate 22 but a better idea of the size of this warehouse group can be gained from the Sanborn Map EE and Plate 7. The 1856 lithograph showed Sansome Street, with clipper ships pulled alongside the Lombard Wharf, and the row of gold rush warehouses that included the Northpoint Warehouse at the far end of Sansome Street. The North Point Grain Warehouse was added to this group in October of 1868 and it is sometimes referred to as Friedlander's Warehouse because it was built by Isaac Friedlander who was known as the grain king in the 1860's and 70's. Friedlander was a German-Jewish immigrant whose six-foot seven-inch height carried some 300 pounds and must have been an imposing figure when he arrived in San Francisco in 1849. By 1852 he had cornered the flour market, making handsome profits for four years until he failed in 1856. He continued selling wheat to Great Britain and Australia in association with James Bell (of Falkner, Bell & Company) in the later 1850's. And by the 1870's he was a millionaire with a fortune built on trading "California White Velvet." The drought of 1877 was a severe financial blow to Friedlander who died the following year, leaving an estate of about $400,000.00. (SFMM, Scraps)

A monument to the expansive grain trade of the late 1880's, Friedlander's North Point Dock Grain Warehouse measured 400 feet along Chestnut Street between Sansome and Montgomery, and 150 feet along Sansome. A small freight office was at the corner of Chestnut and Sansome and an open shed ran the length of the warehouse on Chestnut. A 1914 view shows railroad tracks running down Chestnut and freight cars on a siding where clipper ships had pulled alongside in the 1850's. Friedlander's Warehouse was still in existence in 1969. It was torn down along with the even older Sea Wall Warehouse by North Waterfront Associates despite the protests of citizens of San Francisco. The North Point Dock Grain Warehouse was about 120 feet from the jog in the N-3 alignment.

The **North Point Dock Warehouse** (known as the Sea Wall Warehouse in recent times) was an even older structure that appears in the 1856 lithograph (Plate 7) but would be just out of the Plate 22 photograph. It was listed in the city directories for October of 1856 and was probably

built in 1854 or '55. The Sea Wall was unusual in that the first floor was made of rubble from Telegraph Hill that was cemented together. On the 1887 Sanborn Map EE the note "stone wall 1st" appears. This early warehouse was owned by the Zeile family from 1868 to 1963. It was a two-story stone and brick building and was used for storing grain at the time of our Sanborn maps. It measured 140 feet along Sansome and 150 feet along Lombard. This building was the focus of citizens' protests against its removal as it was one of the earliest buildings from San Francisco's gold rush waterfront history. In spite of their efforts to save the Sea Wall it was demolished in 1969.

Directly opposite the Sea Wall Warehouse and Friedlander's North Point Dock Grain Warehouse was the triangular seawall lot 1509 which was still being filled in our photograph (2) and was vacant in our 1887 Sanborn map. This is the site of the roundhouse for the **Belt Line Railroad** which was built in 1914. The tracks of the Belt Line will be impacted by the N-3 alignment and the roundhouse itself lies within 75 feet of N-3 contract area. As the tracks are to be replaced, a discussion of the site appears in the last section of this report on existing structures near the alignment that have either historic or architectural significance in the north waterfront area.

Chestnut Street to Bay, Sanborn Map FF: Plate 23 of our 1883 panorama corresponds to Sanborn Map FF of 1887 in almost every detail. The end of Seawall Section 2 can be seen at the end of the 1,870-foot grain shed (1) with a water tank "for city sprinkling" and a windmill. The paved section of the top of the seawall ends just at the open door in the long grain shed and the Sanborn agent has noted "gravel" on the rest of the long drive. The street that angles up from the lower right-hand side of Plate 23 is Montgomery Street (3) and it is planked over water that would have been Block 1507, at the corner of Montgomery and Francisco. The roof line in the foreground (4) belongs to the **Eureka Warehouse** that was first listed in the city directories in 1870. Andrew J. Gove was the manager and by 1879 was the proprietor. By 1881 it was called the Eureka Grain Warehouse and Seth Clisby was the proprietor through 1899. There

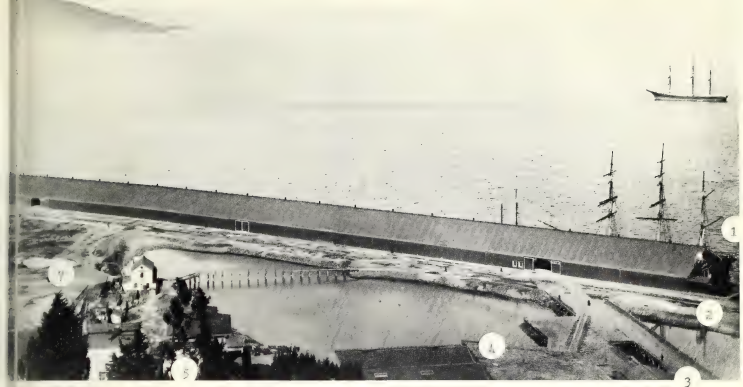
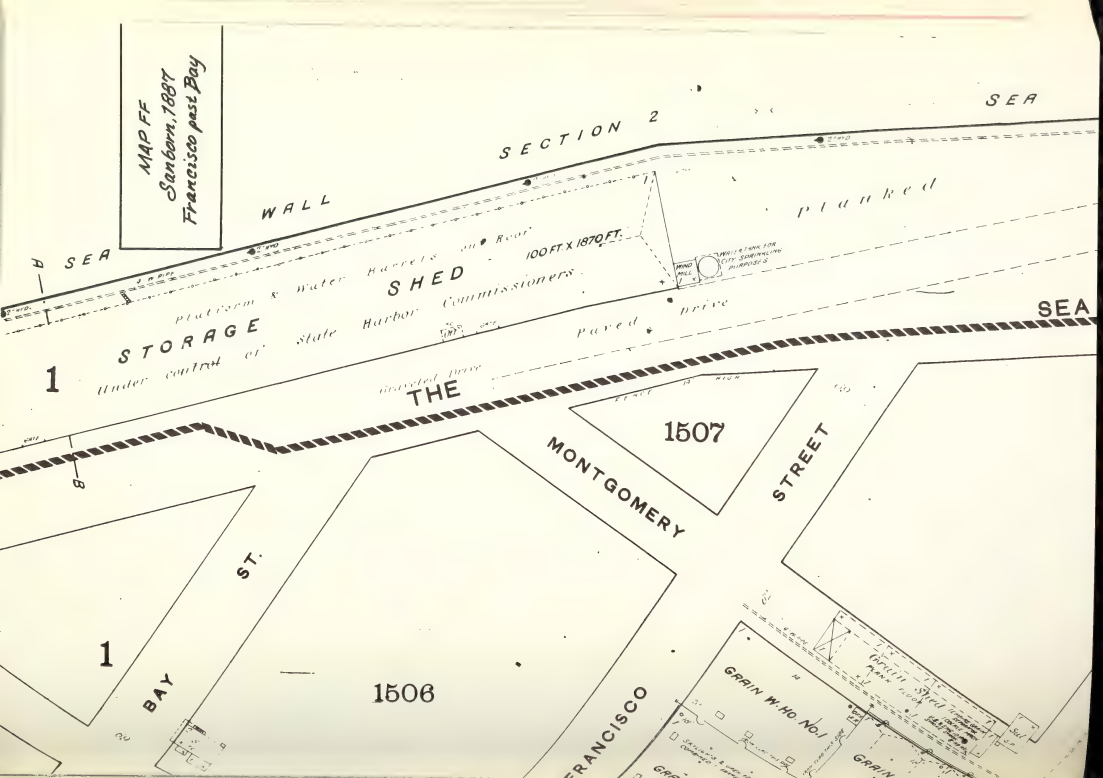


Plate 23: The Grain Shed Along the Seawall, ca. 1883 . . . Built to hold the California grain especially prized by European millers, this 1,870 foot long grain shed ended (1) at the foot of Section 2 of the seawall. Seawall lot 1507 is marked by (2) and the planked road at (3) is Montgomery Street. The edge of the Eureka Grain Warehouse (4) can be seen at the corner of Francisco and Montgomery. Kearny Street (5) leads past the site of the N-5 pump station (7)--a lot still being filled in 1883. The Sea Wall Hotel (6) faced on Bay Street. (both plates, Wells Fargo History Room)

Plate 24: The Northern End of the Seawall, ca. 1883 . . . Alcatraz (1) still had army fortifications. The long grain storage shed (2) is next to the still unfilled seawall lot. Bay Street (4) is in the flat beneath the hill, with Francisco (5) at the top. The sand spit (6) marks Beach Street. The U. S. Army Barge office (7) was at the end of the seawall. A tall grain elevator was at (8). The handsome homes in the foreground (9) face on Chestnut.


MAP FF
Sanborn, 1887
Francisco post Bay
SEA
SECTION 2
WALL
SEA
planked
STORAGE
SHED
100 FT. X 187.0 FT.
Under control of State Harbor Commissioners
Platform & Water Barrels on Rear
Paved
price
SEA
1
THE
1507
MONTGOMERY
STREET
1
BAY
ST.
1506
FRANCISCO
GRAIN W. HO. NO. 1
GRAIN

STOCKTON

STREET

Open-cut
"Area B"

798

1503

STAUFFERS CHEMICAL WKS
(SAL SODA)

MAP GG
Sanborn, 1887
Kearney Street
(N-5 Contract Area)

NORTH POINT

DUPONT

STREET

STREET

1504

SEA

WALL

SHED

787

N-5 PUMP STATION

Open-Cut
"Point A"

KEARNEY ST

BAY STREET

is no directory listing for it after 1904 on this block. While damaged in 1906, rebuilt parts became the Globe Grain & Milling Company, a portion of which stands today. (SFMM, Scraps)

In 1887 the Eureka Grain Warehouse was a group of four warehouses whose different roof lines suggest that they were built at different times. The two sections whose roof line appears in the 1884 panorama measured 150 feet along Montgomery Street and 250 feet down Francisco. An equally large one-story brick warehouse butted against the "iron clad" center wall and extended all the way to Chestnut Street. In 1887 Montgomery Street, out in front of the brick warehouses, contained a wooden grain shed with an Empire Grain Separator.

Kearny Street (5) had a scattering of frame dwellings and shops with pine and eucalyptus trees. The raised wooden planked road extends across what was Block 1506 on the Sanborn Map FF and appears to be a small pond in our photograph. The two-story frame building at the entrance to the wooden road on pilings occupies the same site as the Merchant's Dry Dock Exchange Restaurant.

Bay Street to Dupont, Sanborn Map GG: This section of the Sanborn map corresponds to the left hand side of Plate 23. The two-story frame building (6) with the clotheslines at one side was the Sea Wall Hotel about which little is known beyond its location at the corner of Kearny and Bay Streets in 1887, and its appearance in our 1883 photograph. The open door in the long grain shed marks an office that was just beyond the end of Kearny Street.

The North Shore Pump Station is shown on an appended map. The location is of interest to us on Plate 23 as it appears to have been in the process of receiving various kinds of casual fill in the 1880's. A large puddle (7) marks the nearly approximate section of Kearny between Bay and North Point. Pieces of wood and unidentifiable trash have been dumped in the section near the seawall. See the section of this report on recommendations for testing, monitoring, and potential mitigation as it refers to the N-5 contract area of the North Shore Pump Station.

Plate 24 shows a view that is further north than the N-3 alignment

and the N-5 contract area, but it is of interest to us in understanding the rate of development of the city front in the 1880's. Army fortifications can be seen on Alcatraz (1). The long grain shed (2) on the top of Sea Wall Section I ends with a 73 foot grain elevator (8) and beyond the stacks of lumber that belonged to the Simpson Brothers the cupola of the United States Barge office can be seen (7) at the junction of the seawall and Powell Street. The bit of filled land that appears in the watery area in back of the seawall would be Beach Street (6). Bay Street (4) is down below the hill in the flatlands and Chestnut Street (9) gives a fine view to the handsome bay-windowed home, typical of San Francisco in the 1880's. Francisco Street (5) has a wooden fence for protection against the steep drop-off, and planked sidewalks appear beyond the eucalyptus and pine trees.

In the reproduction of this photograph it is impossible to see the dozen big square-rigged grain ships lying in Richardson's Bay (below Mt. Tamalpais in the distance). The bright sunshine that is typical of San Francisco from Telegraph Hill in the January to March season caught the photographer's eye as the perfect day to record the sparkling harbor scene just as the housewives on that same morning in 1883 decided to take advantage of the winter sunshine and waterfront breeze to fill their clotheslines in side-yards, backyards, and roof-tops.

THE CHANGING OF THE NORTH WATERFRONT . . . 1906-1977

Less than twenty years ago it would have been possible to claim that the north waterfront warehouse district of San Francisco retained much of the ambience of the gold rush period. This was because, in spite of the great fire that followed the earthquake of 1906, some of the big brick warehouses from the gold rush still survived—the North Point Dock (or Sea Wall), Friedlander's North Point Dock Grain Warehouse, the Pioneer, and Griffing's—to name only those that we have discussed because of their proximity to the N-3 alignment. Since warehouse architecture did not undergo profound stylistic changes, the structures built up to the turn of the century had much of the feeling of these very early buildings. In fact, among those warehouses that were destroyed in the 1906 fire, some were rebuilt on the same site, and in much the same manner of their predecessors. Cowell's which is standing today on Front Street between Commerce and Union looks very much like the original 1892 Cowell's Warehouse that burned in 1906. The Italian Swiss Colony Warehouse, at the corner of Greenwich and Battery (about 180 feet from the N-3 alignment), was built in 1903 but retains much of the feeling of the earlier brick warehouse era. The only two extant gold rush structures in the district are the two Gibb's Warehouses that face Vallejo street between Front and Battery—a considerable distance from the sewer contract areas.

If the integrity of the area was able to survive San Francisco's most famous disaster, it was not quite able to fend off the greedy. The spacious and substantial warehouse buildings stood as vast neglected

properties following the change in the north waterfront technology. For many of them, their last direct contact with ships at the piers was serving as ice houses and freezer plants for meat. But ocean freight technology was undergoing changes that are demonstrated in today's conditions. Of the ocean-going freighters seen on the bay today, the big container ships head for Oakland's especially engineered docking facilities, and what ocean freight is left at San Francisco is loaded and unloaded almost entirely south of the Ferry building. The number of fishermen who made their money from taking fish rather than entertaining tourists shrank with the years until Fisherman's Wharf became synonymous with "a place to eat." The working port of the north waterfront is now a pleasure port. The big luxury cruise ships put in at the north waterfront piers at the rate of about two a week. The countless sailboats with their ballooning spinnakers bring the harbor to life as they dodge the new fast-moving Golden Gate ferries and the Harbor Tour boats that load the tourists at Fisherman's Wharf.

The change from work to pleasure has changed the function of property along the north waterfront, but waterfront holdings--regardless of their accessibility, view, or condition, have a kind of insured future value by nature of their proximity to the bay. Artists, architects, printers, and decorators were among the first to appreciate that these big warehouse buildings offered vast space, of an interesting nature, with handsome textured walls for a background for their work. Some far-sighted businessmen had the imagination to see the commercial possibilities in maintaining the general existing structures and restoring the details as a background for shops, restaurants, and impressive offices. The Ghirardelli Square renaissance became the forerunner of such tasteful development all over the country. From downtown Portland to Petaluma the commercial word was out that "restoration" was in.

However, men with less imagination, but an appreciation of the possibilities of speculation with waterfront property, were able to destroy what the fire of 1906 did not. In spite of citizens' protests, one of the largest and earliest remaining structures from San Francisco's gold rush, the Sea Wall Warehouse, was demolished by developers in 1969--the North

Plate 25: **Airview of the North Waterfront, 1964 . . .** This view of the warehouse district and piers of the north waterfront shows the site of the N-5 pump station at the lower right-hand corner. The N-3 alignment proceeds up to the present day Embarcadero, past the wedge-shaped roundhouse of the Belt Line, and on up to Jackson Street. (Ed Brady Photo)

Waterfront Associates who got rid of the encumbrance of the real thing in favor of a project that failed but spawned some apartment houses whose best feature may be their impermanence.

When the magnificent, but restrained, Fontana brick warehouse was torn down to be replaced by two tall Miami-Beach slabs that bulged both up and out—totally out of scale with city's north waterfront intimacy--the aroused citizenry could see the damage done and appreciate the dangerous precedent of lining the bay with a wall of buildings calculated to bring in as much money as the sky is high. The forty-foot height limit was the city's answer to the Fontana Apartments. This created an automatic resurgence of interest in whatever warehouse buildings remained.

The Haslett Building, fronting on Beach and Bay, was "saved" by a special act of the state legislature to become a great museum for the people of San Francisco. The Haslett Building is now part of the National Park Service Golden Gate Recreational Area. The commercial restoration of the Ice Houses and the Cannery followed close on the heels of the Ghirardelli restoration and development. A promise of more rational development offered the hope of a trend. Planners, and all of those involved in making decisions about the north waterfront, should look with wiser eyes and consider even more carefully before permitting the destruction of **any** north waterfront structure that might take away from the total integrity of the handsome warehouse structures that remain in place.

With this recent history in mind it seems important to note any remaining structures that are within 200 feet of the N-3 or N-5 contract areas, with some special notice to the only existing structure that will be impacted—the railroad tracks of the waterfront Belt Line.

The Belt Line Railroad: The building of the new seawall suggested the ideal of a "circular railroad." The advantages of what was then a novel idea were discussed in the San Francisco **Post** in October of 1876: "A street [the present Embarcadero] should be laid out along the waterfront not less than 200 feet wide, to give full access to the wharves and permit the laying of tracks for steam-cars, horse-cars, and spur-tracks, along the

piers the entire length, switches, turnouts, and all necessary facilities for bringing ship and car together and giving easy, direct, and speedy communication between the different portions of the city front." Although the construction of the railroad was first proposed in 1873 (H. Com. 1873: 6), it was not until 1890 that the Harbor Commission reported, "The belt railroad is already under construction in the building of the freight ferry slip on Section 4 of the seawall at the foot of Lombard Street." (H. Com. 1890: 15)

The following discussion on the origin of the Belt Line Railroad was written by Dr. D. M. Van Horn for Ann S. Peak & Associates from a preliminary draft on the N-3 contract area.

> The railroad was to consist of a double set of steel tracks, each of which would have a third rail for accommodating narrow-gauge cars. The tracks, as they were originally planned, were to span two principal routes: (1) from the car ferry slips at the corner of Lombard and the Embarcadero west to Powell Street and (2) from the car ferry slips southeast along the Embarcadero to Pacific Street. The Harbor Commissioners further stipulated that "under no circumstances should such tracks be allowed on the seawall thoroughfare." This probably explains how the present belt railroad tracks came to occupy a position in the middle of the modern Embarcadero. It must be remembered that the original seawall thoroughfare (i.e., the Embarcadero) was only 40 feet wide. The Harbor Commissioners placed their railroad on the landward side of the thoroughfare in order to spare the seawall wharves from the considerable strain which the railroad would have placed upon them (and to conserve valuable wharf space). However, when the pavement was later widened to its present width, the railroad tracks had to be incorporated into the new, wider road.
>
> The belt railroad tracks were not laid as originally planned, however. In 1892, the Harbor Commissioners state that: ". . . the road as constructed extends from the foot of Francisco Street to the foot of Broadway . . . connections are had with the various railroads by steam ferry transfer at the foot of Lombard Street, and side tracks are provided on seawall lots nos. 10, 11, 12, 13, and 14."
>
> The "seawall lots" to which the Harbor Commissioners refer are the new lots created by construction of the seawall some 200 feet out from the old city waterfront. This land was under the control of the Harbor Commissioners, who had experienced considerable difficulty in determining what to do with it. (Lots 10-14 were between Filbert and Broadway,

Plate 26: Looking East from Vallejo, The Belt Line, May 11, 1906 . . . Taken just a month after the earthquake, the Cowell's Cement Company in the upper left is in ruins but down the street the Italian Swiss Colony Warehouse was still intact. The drays are carrying lumber and cement down East Street, past Crowley's Launches and the South of Market Tug Boat Company. At this time the immense amount of shipping meant that the north waterfront was still a working part of the San Francisco waterfront. (Turrill Photograph, S. F. Maritime Museum)

adjacent to the west side of the Embarcadero; for other references to the seawall lots, cf. H. Com., 1886: 12 and 1888: 5)

The original rolling stock of the belt railroad consisted of one "first-class" Baldwin yard locomotive and two station flat cars (H. Com., 1892: 19)

Morphy, writing in 1923, tells us that the Belt Line total trackage was fifty-four miles, and by then had eight locomotives, a considerable increase over the first seven years of operation when one locomotive and one flat and one hand car managed to switch 99,000 cars. Business increased by 173% between 1887 and 1900. Heavy girder rails were laid on a regular paved roadway in 1907, replacing the light rails that had been laid on ties without ballast and with planks in between. One of the unique features of the Belt Line was the use of three lines of rails on each of its double tracks so that cars from narrow-gauge as well as standard-gauge could be accommodated. (Morphy 1923: 33)

By the end of 1910, all rail had been replaced and the tracks were then extended through the tunnel at Fort Mason to link up with the Panama-Pacific exposition and the United States Army Transport docks at the foot of Laguna Street. (Ibid.: 34)

The roundhouse of the Belt Line was constructed on a triangular lot between Sansome and Lombard in 1914. On Sanborn Map EE this is shown as Block #1509. Although currently servicing only a fraction of the trains it once did, and employing only a small number of men, the Belt Line roundhouse still appears as it did when the freight service was more active. The one-story, wedge-shaped building still has blacksmith shops and machine shops that would appear to date from its beginnings. The roundhouse is within fifty feet of the N-3 alignment and although it will not be impacted by the N-3 contract excavation the tracks will be removed.

The Planning Department of the City of San Francisco has recommended that the double track be replaced, so that this unique communication link between BART, the ferry boats to Marin, and public transportation for the downtown section of San Francisco can be utilized in the future for transporting people rather than freight--thus recognizing

the change in the north waterfront as it has become a major tourist attraction with its growing museum complex and the Ghirardelli and Cannery recreational attractions. The complete length of the Belt Line tracks out to Crissy Field makes the Belt Line of major interest to the National Park Service as a potential transportation link to the Golden Gate National Recreation Area. An adaptation of a trolley-line to connect the north waterfront to the central city and the East Bay has been suggested by waterfront planners. (Olmsted 1976: 292-293)

In addition to keeping the Belt Line intact as an important potential communication link between the north waterfront and the rest of the Bay Area, railroad historians have suggested that while the combination of narrow-gauge and standard-gauge tracks was once common, the old Belt Line tracks of this description have become almost unique in the United States. It has been suggested that should such a portion of combination narrow- and standard-gauge track be uncovered in the excavation for the N-3 alignment, a section of the track should be preserved. No determination has been made of the location of any such track at this date.

Merchants Ice & Cold Storage: Across Lombard Street from the Belt Line roundhouse is a large brick warehouse (about 150 feet square) that was built in 1901 for the Union Can Company. It is on Battery Street, between Lombard and Greenwich, on the same block as the old Greenwich Dock Bonded Warehouse (ca. 1861) and the City Warehouse of the same period. Two arches of the Greenwich Warehouse are still extant, according to the research of the San Francisco Maritime Museum. At about the same time the Union Can Company built this three-story brick warehouse the company was absorbed by the American Can Company. The building survived the 1906 earthquake and fire and was leased as a warehouse in 1908. By 1913 the Merchants Ice & Cold Storage Company was occupying this building, and remained there well into this decade. At the time of this report, the handsome brick building with big arched windows looking out towards the bay appears to be in excellent condition and is currently for lease. It will not be impacted by the N-3 alignment but does lie

Plate 28: Old Fisherman's Wharf, ca. 1887 . . . This photograph was taken from a pier that was built out from the two piers near the foot of Union Street to house the big Italian fishing fleet. The characteristic rig of the boats was called "lateen" and was a variation of the Catalan fishing boats.

Plate 27: Italian Swiss Colony Warehouse, built in 1903 . . . Wine from the vineyards of the farming cooperative at Asti could be unloaded right at the corner of Battery and Greenwich, stored in the wine vaults, hauled away by dray, sent to New York by either ship or by train. (both views, S. F. Maritime Museum)

within fifty feet of the excavation.

Italian Swiss Colony Building: On the southwest corner of Battery and Greenwich is one of the finest examples of industrial architecture remaining in the Telegraph Hill area--the Italian Swiss Colony Building. Built in 1903, from a design by Hemenway and Miller, it is on the site of the Flint, Peabody Warehouse complex that was built on the waterline in the 1850's.

The Italian Swiss Colony was derived from the Italian Swiss Agricultural Association, which was a cooperative formed on March 10, 1881 to meet the needs of the non-English-speaking immigrants from Italy and Switzerland who were having trouble finding work in California. Andrea Sbarboro, a native of Asti, Italy, formed a cooperative savings and loan association for these new arrivals so that they could invest a large part of their monthly wages until they acquired a minimum of at least five shares of stock in what was a farming cooperative. Although not all of the immigrants were satisfied with being paid in stock rather than cash, the cooperative prospered and invested in 1,500 acres of farmland in Sonoma County. They imported the choicest cuttings of grapes from Europe and in less than two decades the immigrant laborers had become prosperous viticulturalists and wine merchants with warehouse facilities in San Francisco. Their first wine-vault warehouse was built in 1898 on the west side of Battery Street between Pacific and Broadway but within five years the business had outgrown these facilities and a new building was planned at the southwest corner of Battery and Greenwich. The new warehouse was nearing completion in October of 1903 and was especially constructed to stand the weight of between two million and two and a half million gallons of wine. The building also had the advantage of railroad tracks built to run right into the warehouse itself so that cars could be loaded at the wineries in Sonoma and unloaded at the wine vaults for storage in San Francisco or shipment to New York. At the time of the opening of this additional wine storage center, the Italian Swiss Colony owned seven of the largest vineyards and wineries in California and produced one fourth of all the dry wine in the state. (**Hist. of Italian-Swiss**

Col., 1903: passim)

It is somewhat ironic to note that during prohibition the Italian Swiss Colony building was occupied by the Golden Gate Milk Products Company. At the time of this report the building was nominated for landmark status in the city of San Francisco. The site will not be impacted by the N-3 alignment but the historic Italian Swiss Colony building lies within 150 feet of the excavation area. Levi Strauss has purchased a large section of land below Telegraph Hill that includes the Italian Swiss Colony building. It is their intention to preserve the building and incorporate it into their construction plan.

Sperry Flour/Abbott Tower: The slender tower of the Sperry/Abbott building at 60 Union Street between Front and Battery occupies the site of the American Sugar Refinery on the 1887 Sanborn maps. It was designed by George Wagner (who also supervised the construction of San Francisco's city hall) and built in 1915 of ferro-concrete. It is unusual in that it was an early use of a much more modern technique of using concrete in an exposed, straightforward manner, rather than a building material treated to resemble something else.

Sperry Flour was a company that dated back to the gold rush when Austin Sperry built his first mill in Stockton in 1852. The company that built the tower in 1915 was bought by General Mills in 1920. From 1946 to 1967 Abbott pharmaceutical laboratories occupied the building, hence the name Abbott appears on the tower. The building is an attractive addition to the north waterfront because of its scale and excellent design. The site will not be impacted by the N-3 alignment but the Sperry/Abbott Tower stands only about 150 feet away.

An aerial view of the N-3 and N-5 contract areas taken as recently as two years ago for the Department of Sanitary Engineering, in preparation for the wastewater project, reveals the two biggest factors in changing the north waterfront face: the automobile has taken over much of the area in the form of freeways (albeit one is "sawed off" and incomplete), parking lots, parking spaces on piers and around and under freeways; and too many of the old structures have been torn down to make room for

new developments (i.e., the new Master Charge Building and the big apartment complexes at the foot of Telegraph Hill). The few remaining brick and stone structures that were part of the warehouse district of the north waterfront appear as endangered species on a changing landscape.

RECOMMENDATIONS FOR ARCHAEOLOGICAL TESTING AND MONITORING ALONG THE N-3 ALIGNMENT AND N-5 CONTRACT AREA

Intensive archival research concerning the development of those portions of San Francisco on or near the N-3 and N-5 alignments has allowed the authors of the present report to attain a relatively comprehensive understanding of the evolution of the San Francisco waterfront. Among other things, our research has allowed us to become familiar with those structures that existed on or near the N-3 and N-5 alignments during the past century and a quarter as well as the uses to which they were put. Also, as closely as can be determined by archival research, the authors have tentatively identified several areas along the alignments in question that might conceivably yield cultural materials of potential interest to historians and archaeologists.

Archival research has determined that there is virtually no possibility of encountering cultural materials from the prehistoric, Spanish, Mexican or early American periods of San Francisco's occupation (ca. 2000 B.C.—1848 A.D.) since the entirety of the N-3 and N-5 alignments were submerged beneath 12-30 feet of bay waters. Hence, no settlements, encampments, cemeteries, etc., from these periods could exist along or in the vicinity of either the N-3 or N-5 alignments. In fact, the only artifacts from any of these periods that could possibly be encountered would be the random specimen that was either thrown or dropped over the side of a ship (or Indian canoe), and the chances of stumbling upon such a find are incalculably low. Ships of the 1775-1848 period did of

course ply the waters of the San Francisco Bay, but there is no record of one of these vessels ever having been sunk or abandoned anywhere near the N-3 or N-5 alignments.

Not until the advent of the gold rush in 1849 did measurable human activity begin in the areas transected by the N-3 and N5 alignments. There is no question that much cultural material was deposited on or near the alignments during the gold rush period. Among other things, seven ships of this period have been reported as having been sunk between 150 and 200 feet west of the N-3 alignment. In addition, many wharves and piers were constructed during this period and a great deal of fill deposited in areas transected by the alignments. However, much of the area in and around the N-3 and N-5 alignments were subjected to repeated dredging activities during the 1860's and 1870's which would have seriously disturbed or removed altogether much of the older concentrations of cultural material that had been laid down during the gold rush period.

With regard to the City Building period (1858-1880), there is no question that cultural material from this era will be encountered along the N-3 and possibly along the N-5. However, it is likely that most finds will be of a random nature since dredging activities (which were common during this period) would preclude the systematic deposition and preservation of cultural materials.

Between 1878 and 1889, the present seawall was built along the N-3 alignment. The completion of the seawall greatly reduces the possibiity of recovering the signficant cultural materials from subsequent years, for at this time The Embarcadero was brought to grade along the N-3 alignment. The seawall itself, a structure of rock emplaced in a dredged trench and rising to the city grade level, was fifty feet wide and lay eastward (along The Embarcadero) on the N-3 alignment. The sewer excavation will follow the 150 feet of backfill that forms the major part of The Embarcadero foundation. It is likely that this fill consists primarily of dredged bay mud, fill from Telegraph Hill or convenient sand hills to the north, and not material that is rich in cultural remains. Hence, there is little likelihood of encountering significant concentrations of cultural materials from the late nineteenth century along the N-3 or

N-5 alignments.

Preconstruction Archaeological Testing Procedures: In spite of the fact that there is, according to archival studies, a rather low probability of encountering significant concentrations of historic cultural materials in meaningful stratigraphic sequence that might substantially add to our already existing knowledge of the evolution of the city of San Francisco, there are several areas along the N-3 and N-5 contract alignments that cannot on the basis of library research alone be dismissed as archaeologically or historically of no value. It is therefore proposed that a limited program of archaeological testing be undertaken prior to the advent of construction along the N-3 and N-5 alignments. In our opinion, a series of mechanical borings in strategic locations would adequately and efficiently determine the presence or absence (as well as the nature of) cultural materials on those portions of the alignments in question.

It is proposed that fifteen archaeological mechanical test borings be placed along the N-3 and N-5 alignments by a qualified historical archaeologist selected by the City and County of San Francisco. This archaeologist (the Principal Investigator) shall have the responsibility of selecting the locations for the borings as well as the number of borings to be placed at each location that has been selected. The Principal Investigator shall monitor the implementation of the borings and, with the assistance of one or more qualified persons whom he may hire, shall have the responsibility of collecting samples of the cultural materials unearthed by the borings and transporting them to an appropriate institution for analysis and storage. The Principal Investigator shall within twelve working days of the completion of the borings produce a written report describing any findings made and their interpretations. If, in the opinion of the Principal Investigator, the evidence produced by the first ten borings indicates a need for additional achaeological testing, up to seven 24" test borings are to be held in reserve to be placed in locations designated by the Principal Investigator. In the event that this second set of borings are implemented, the Principal Investigator shall be obliged to conform to the same set of responsibilities he undertook in the direction

of the initial test borings: namely, the monitoring of the implementation of the borings and, with one or more qualified assistants, the transportation of the cultural materials collected to an appropriate location for analysis and storage, and the production of a report within twelve working days of the completion of the fieldwork.

On the basis of our present knowledge, the following locations appear to be the most likely to yield significant cultural materials in some kind of stratigraphic sequence: (1) That portion of the N-3 between Jackson and Pacific. Captain Lawson's ships were sunk somewhere to the west of the alignment and there is a small possibility that one of these four vessels might have moved sufficiently eastward to have transected the route of the alignment. There is also the possibility of encountering fill that was placed before the construction of the new seawall in this area. Finally, it would be of interest to know the precise location of the old seawall, which will be transected by this portion of the alignment. For all of these reasons, it is proposed that four mechanical test borings be placed along this portion of the N-3 alignment, at evenly spaced intervals between Jackson and Pacific Streets. (2) Some doubt exists concerning the exact location of the sunken hulk **Phillip Hone**. It is known to be somewhere west of the N-3 alignment in the vicinity of Union Street. It is therefore recommended that two mechanical test borings be placed along the appropriate portions of N-3 to make certain that this hulk is not impacted by construction along the route of the alignment. The first boring should be located to the south of Union Street and the second some hundred feet to the north of the first. (3) Three archaeological borings should be placed along the N-3 between Filbert and Greenwich, as the N-3 alignment in this area will transect a portion of old Lot 623, which apparently contains fill placed prior to the construction of the new seawall. (4) One archaeological boring should be placed where Lombard Street intersects the N-3 alignment. This is the site of the old Greenwich Dock which the N-3 alignment will apparently intersect. (5) Three borings should be placed at the site of the old Merchants Dry Dock on the N-3 between Bay and North Point Streets. This site was one of considerable interest and cultural materials of

potential significance could conceivably be encountered at this location. (6) Finally, two test borings should be placed along the route of the N-5 pumping station to the west of Kearny Street. This area was subject to casual dumping during the 1880's and some of this deposited trash might prove of interest to archaeologists or historians. We believe that with the implementation of these archaeological test borings and concomitant analysis and report by the Principal Investigator an adequate program of preconstruction testing shall have been undertaken with regard to the mitigation of adverse impact to cultural resources contained within the N-3 and N-5 contract alignments of the North Shore Outfalls Consolidation Project.

The C-2 contract, covering the King Street area, contains the procedures for archaeological monitoring during the course of construction that were also used in the N-3 and N-5 contract areas and therefore, the earlier section is not reprinted here.

Addendum: Subsequent to this report Dr. Allen Pastron has concluded his preconstruction archaeological testing program and has submitted a report entitled, **Report on Preconstruction Archaeological Testing Program for the N-5 Contract Area** (Fall, 1977).

SAN FRANCISCO FISHERMEN . . . Daily Evening Bulletin, October 8, 1881

In San Francisco there are nearly 100 boats, large and small, engaged in the fishing trade not including those of the Chinese fishermen. Some are used exclusively for fishing in the bay, and others, the larger ones, for deep-sea fishing outside the Heads. The average number of men to each boat is three. Most of them carry only two, but the larger vessels that go outside for ocean fishing carry as many as six and sometimes seven men, in proportion to the size of the boat. These [boats] vary in length from twelve to thirty feet, and are all, or nearly all, rigged with the lateen, or as the fishermen term it, the Catalan sail. This sail is in the form of a right-angled triangle, the same as that originally adopted by the Catalans of Spain. In carrying capacity the boats run from half a ton to ten tons, and are worth from $150 for the smallest to $2,000 for the largest, fully equipped.

The greater number of the boats are worth from $350 to $500 each. In addition to the value of the boats, there are the seines, gill-nets, the value of the stock in trade of each boat . . . may be set down at $300. . . . There are at the present time about 250 fishermen employed in the bay and about fifty in the deep-sea fishing. These do not include the men employed on the Sacramento River or those in the canneries. The fishermen are principally Italians, some Greeks, Spaniards, Austrians and Portuguese.

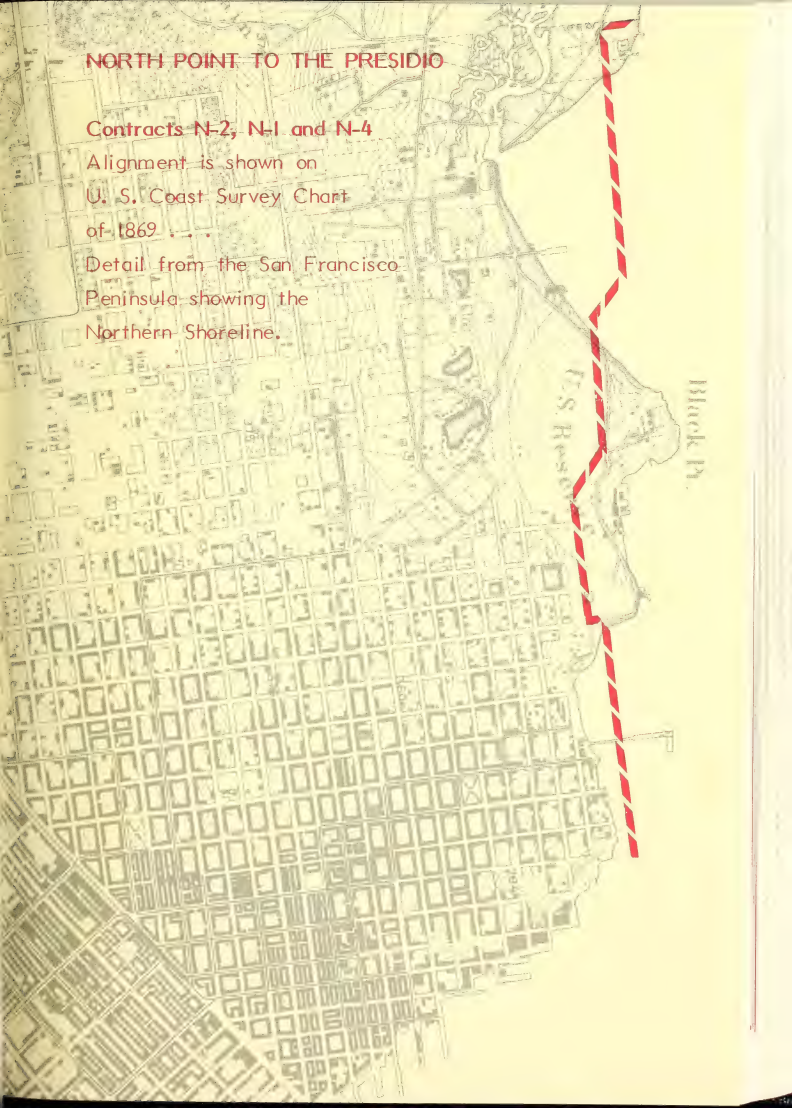
The fish grounds outside of the Heads extend over a distance north and south of about 125 miles. Northward the hardy fishermen go as far as Point Arena and south to what is known as New Year's Point. The larger boats go off as far as the Farallone Islands, others Tomales, and Bolinas Bay. . . . In San Francisco Bay, smelt, herring, perch, flounders, sturgeon, tom-cods, and sardines are caught in the greatest numbers.

Some of them are taken, more or less plentifully, all the year round. Others, such as herring and sardine are only to be had in particular seasons. . . . In deep-sea fishing, the chief varieties of fish taken are the rock-cod, tom-cod, flounder, salmon and codfish. . . . Two other kinds of fish taken outside are the king fish and sea bass. . . . It would be wrong to overlook the Octopus or Devil fish. There are possibly very few of the inhabitants of this city who will manifest much interest in this fish as a matter of food. But it is not so with the fishermen themselves, nor with the Italian and Greek population generally. To them it is as great a delicacy as a truffled capon to the Frenchman. . . .

The average earnings of each boat are less than might be supposed. During the salmon season, which is the fisherman's harvest, they will average as much as $50 a week. Taking the year round, the earnings of a boat carrying three men will not average more than $90 a month, realizing (after the boat's expenses have been paid) not more than $25 a month to a man. They would do better if it were not for the Chinaman. . . . In San Francisco the catch is sold in a lump; the expenses of the boat for the week are deducted and the balance is divided up. Saturday is the usual settling up day for the week.

On looking at the fishing boats, knowing that the men stay out for two and three nights at a time, almost the first question one is prompted to ask is, "Where do you sleep?" They tell you in reply that they partake somewhat of the nature of the blackfish, who are never supposed to sleep at all. On the boats that go outside, a narrow deck, about fifteen inches wide runs fore and aft along the gunwale. They manage somehow or another to work themselves under it rolled up in their blankets. . . . Once in, he wedges himself up on the outside and is then, as he says, as snug as a bug in a rug. . . .

The boats belonging to the fishing fleet are all moored at the foot of Vallejo Street, at its intersection with Front Street. A few years ago the harbor was quite large enough to accommodate all the fishing boats, but it is now too cramped, and if the trade goes on increasing, new dockage will have to be provided.


NORTH POINT TO THE PRESIDIO
Contracts N-2, N-1 and N-4
Alignment is shown on
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of 1869 . . .
Detail from the San Francisco
Peninsula showing the
Northern Shoreline.
U.S. Reservation
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SCOPE, OBJECTIVE, AND METHOD

The basic objective and directions for the study of areas covered by the contracts known as N-1, N-2, and N-4 have been outlined in the introductory section of the Channel Street (C-1 and C-4) section of this report. This report differs from the previous study in that the initial research on the N-4 contract (Marina) area was done by Dr. David Van Horn for Ann S. Peak and Associates and his resulting survey has been incorporated into the body of this report. In the case of the N-1 (Ft. Mason) contract area the preliminary research and report for Ann S. Peak and Associates was done by Robert Gary, whose work has also been included. Efforts were made to preserve the integrity of their work, but new and useful information was added, particularly regarding the open-cut excavation sites as related to the possibiity of Spanish excursions in the Black Point beach area.

Initial archival research on the North Point Street area was done by Patrick Hallinan and Allen Pastron. This preliminary research was incorporated into detailed discussions of each of the six excavation sites that connect to the slurry shield tunnel excavation that is unique to the N-2 contract area. In addition to these specific sites a discussion of the fill itself has been added to the more preliminary work based on evidence not available at the time of the Hallinan-Pastron report.

Of some particular interest was the new information regarding the precise nature of the construction of Fair's seawall in the Marina, as well as the source of the fill used in that area. This useful contribution was

made by Howard Livingston in a series of letters to Karl Kortum, director of the San Francisco Maritime Museum. A partial account (previously unpublished) of the actual construction details has been included in the Appendix.

Objective and Directions of the Study: In the case of the N-2 (North Point) contract area the particular construction tehcniques are unique to the entire North Shore and Channel Outfalls Project. A slurry shield tunnel runs **under** the fill at a depth of approximately 35 feet from the influent structure excavation that connects the tunnel with the N-5 pump station at North Point and Kearny to the center of the intersection of North Point and Columbus. A more detailed description follows. In addition to the slurry shield tunnel there are six open-cut excavations covered by the N-2 contract; the influent structure excavation at Kearny and North Point, the Stockton Street excavation that runs from North Point to Beach Street, three street intersection excavations on North Point at Powell, Mason, and Taylor, and a curved excavation that rounds the corner at Leavenworth and North Point. Only at the point of these open-cut excavations would there be any probability of finding cultural remains; therefore, each excavation has been discussed in detail. An exception to the above statement would be the possibility of the slurry shield tunnel excavation encountering pilings from Meiggs' Wharf between Mason and Powell on North Point and pilings from a wharf dating to 1878 at the foot of Mason Street; therefore, these two structures are also treated in detailed discussion, supplemented with historic maps and photographs.

In the case of the N-1 contract area (Ft. Mason) conventional soft ground and rock tunnels will preclude the possibility of encountering any cultural remains except at the short open-cut excavation between the eastern portal of the tunnel and Laguna Street. This excavation is dealt with in a separate addendum to the Ft. Mason report.

The N-4 contract area (the Marina) is an open-cut excavation largely through recently filled land in which the nature of the fill is known to be sterile. In two instances this trench cuts through what was at one

time the natural shoreline, namely at a point between Laguna and Buchanan and at a point just past Broderick and the Marina Boulevard. Both of these excavations are dealt with in the Spanish, and Mexican sections of this report and as addenda to the N-4 (Marina) report.

Scope of Construction Excavation: The area between historic North Point (the intersection of Kearny and North Point Street) and the Presidio (foot of Lyon Street) includes three separate contract alignment (N-2, N-1, and N-4) that involve three distinct construction methods. The N-2 alignment extending along North Point Street from Kearny Street to Leavenworth Street is principally a slurry shield tunnel that will be bored through the bay mud underneath the fill of what was historically the cove at North Beach. The Contract N-1 alignment runs from approximately the intersection of North Point and Leavenworth Streets to Bay Street, to Van Ness Avenue, and through Ft. Mason (Black Point) to Beach and Laguna Streets; the construction is principally a conventionally bored tunnel structure, mostly through rock, partly through sand. The N-4 alignment runs from Beach and Laguna Streets to Marina Boulevard and along the northern side of the boulevard to Lyon Street, and north along Lyon Street to the Baker Street Outfall; the entire construction involves cut-and-cover excavation.

N-2: North Point Street: The eastern end of the N-2 tunnel is 65 feet west of the Kearny Street property line. From this point to approximately 66 feet east of the Leavenworth Street property line, the sewer is a 14- to 17-foot-diameter slurry shield tunnel underneath North Point Street. The center line of the tunnel is not yet finally determined. At the east (Kearny Street) end the invert depth of the tunnel is 39.34 feet below city base; at the west (Leavenworth Street) end, the invert depth of the tunnel is -32.21 feet. The slurry shield construction involves a new mechanical technique particularly suited to boring through mud. The subsurface profile of the slurry tunnel alignment shows the top of the sewer running generally three to eight feet under the fill. (See Subsurface Profile Plate 21.) From the west end of the slurry tunnel, around the

corner of Leavenworth Street to a point 16 feet south of the southerly property line of North Point Street, the sewer construction will involve open-cut excavation. On Map 3, Point F indicates the location of this connecting structure between N-2 and N-1 tunnels. Also involved in the N-2 construction are the excavations at the intersection of Powell Street (Point C on Map 3), Mason Street (Point D), and Taylor Street (Point E). These shafts are required to provide connections between existing lateral sewers and the new tunnel. Connecting the N-2 slurry tunnel with the N-5 Pump Station and N-13 box sewer running along the north Embarcadero is a large influent structure at Kearny Street that will involve open-cut excavation (Point A on Map 3). Finally, an open-cut excavation to a depth of about 10 feet extends from the tunnel, along Stockton Street (22 feet east of the west property line of Stockton) to a point 37 feet north of the south line of Beach Street. This excavation is for the sewer connection to the existing system to the north.

N-1: Bay Street and Fort Mason: From the western end of the N-2 contract area the N-1 alignment extends up Leavenworth Street to Bay Street, and westward along the line of Bay Street to Fort Mason, at Van Ness Avenue. The centerline of the 17-foot-diameter sewer is 38.1 feet south of the southerly property line on Bay Street. From a point 161.85 feet east of the easterly property line of Van Ness Avenue it curves to the northwest and then again to the west under Black Point to approximately the north side of Beach Street and westward along this line to a portal approximately 179 feet east of the easterly property line of Laguna Street. (See Map 3) This construction is conventionally bored rock and soft ground tunnel, entirely through original strata, and as much as 100 feet below the surface of Black Point. Between the western portal of the tunnel and approximately the northwest corner of Marina Boulevard and Laguna Street is an open-cut construction link with the N-4 contract sewer. At the western portal (point E on Map 4) the invert elevation is -23.6 feet, at the western end of the alignment -23.12 feet. This box sewer has a fifteen-foot inside width.

N-4: Marina Boulevard: From the eastern end of the N-1 contract the N-4 alignment runs along the north line of Marina Boulevard to about the centerline of Baker Street, where it jogs to more northerly alignment 10 feet north of the north property line of Marina Boulevard. At the east curbline of Lyon Street the alignment turns north at a right angle and approximately follows the curbline for about 360 feet. The entire sewer is open-cut construction. From its east end to approximately Casa Way and Marina Boulevard the box sewer is a 17-foot inside width. From Casa Way to Baker Street it is a 9-foot width. The remaining portion is an 18-inch drain line.

To summarize, the N-2 (North Point Street) sewer is almost entirely a slurry wall tunnel passing through the bay mud beneath the fill; the N-1 (Bay Street and Fort Mason) sewer is almost entirely a tunnel underneath the original high ground of Black Point; the N-4 (Marina Boulevard) is open-cut excavation, most of it through the fill of the former cove between Black Point and Sand Point. Map 3, which is a manuscript map prepared by the engineer of the Board of State Harbor Comissioners in 1877 for the purpose of showing the proposed new seawall, is here used to show the sewer alignment relative to the original shoreline and topography. Examination of this map in connection with the modern soil profiles defines the initial limits of possible impact upon historic cultural resources. The N-2, N-1, and N-4 construction contracts will have no impact on any existing above-ground structures other than pavement and railroad tracks.

SUMMARY: HISTORIC CULTURAL RESOURCES, NORTH POINT TO THE PRESIDIO (Contracts N-2, N-1, and N-4)

A description of the alignment and excavation methods is found above. Archaeological conclusions and recommendations will follow the description of historical activity of various periods along the alignment. It should be borne in mind that the slurry tunnel under North Point Street between Kearny and Leavenworth Streets (the major construction of the N-2 contract) passes through bay mud **beneath** fill that is known to contain refuse dating back to around 1880 and that nearly all of the N-1 construction is a conventional tunnel underneath the high ground of Bay Street and Fort Mason through native rock and soft ground. However, there are six open-cut excavations of varying size connected with the North Point Street (N-2) construction.

Prehistoric (to 1776): The three contracts, N-2, N-1, and N-4, involve three of the five points at which the alignments of the North Shore and Channel Outfalls Consolidation Project cross the shoreline of the bay as it was when first visited by Europeans. Thus, there is a physical possibility of prehistoric cultural remains that does not obtain throughout most stretches of the alignment. The points are: 1) approximately the intersection of North Point Street and Leavenworth; 2) the stretch between the west portal of the Fort Mason (N-1) tunnel and the intersection of the Marina Boulevard and Buchanan Street; and, 3) the western end of the alignment along Marina Boulevard from Broderick Street to Lyon, and north on Lyon

to the Baker Street Outfall Facility. This latter area was Sand Point on Strawberry Island, historic names evocative of the original nature of the area. Wild strawberries were at least sometimes gathered during the American Period, and we might assume that the aboriginal inhabitants of the San Francisco Peninsula did likewise. Strawberry Island would have had none of the requirements for occupation. The slough separating this narrow-necked peninsula from the mainland was fed by springs of the Presidio, but was itself tidal. The island was totally without useful cover and exposed to the daily fresh gale that blasts through the Golden Gate from April to October.

The beach on the west side of Fort Mason in the vicinity of Laguna and Buchanan Streets was about one third of a mile from the freshwater pond to the south later known as Washerwoman's Lagoon. Attempts to place the original Spanish Mission site here and to identify this as the place where the pilot Augierre encountered the weeping Indians cannot be substantiated and are refuted or ignored by the best authorities. There is no present evidence of Indian occupation of Black Point, but the original site of San Francisco did not abound in sources of fresh water as large and reliable as Washerwoman's Lagoon and the Russian Hill springs that fed it.

The excavation for the connecting structure between the slurry tunnel under North Point Street and the hard-rock tunnel under Leavenworth Street is on or near the foot of a steep sand hill that dropped off directly into the bay, an even more impossible site for habitation than the two areas described above.

Spanish, Mexican, and Early American Periods (1776-1848): Whatever the merits of the argument that somewhere off North Beach was the original anchorage "at Yerba Buena," the area of the cove transected by the N-2 alignment was too shallow for even 18th century ships, except off North Point itself, a place no seaman would choose when alternatives were available. The official Spanish anchorage, sometimes thought to have been off the west side of Black Point (Fort Mason), is very convincingly shown to have been near Fort Point, off the site of the present Coast

Guard station. The beach on the west side of Fort Mason transected by the N-4 alignment does represent a practicable boat landing--assuming an anchorage a half-mile from shore exposed to the full sweep of the wind and surge through the Golden Gate. Strawberry Island was not a feasible landing, as it was separated completely from the Presidio by sloughs and marshes. The possibility of maritime activity along the entire N-2, N-1, and N-4 alignment between 1835 and 1848 is remote, for the abandonment of the Presidio and development of the anchorage and village at Yerba Buena, southeast of North Point, would have removed any incentive to anchor or land in this vicinity.

The Spanish established a small battery at Black Point in 1797. The beach transected by the N-4 alignment on the west side of Fort Mason may or may not have been used in the course of daily visits to this outpost. The battery appears to have been removed in 1806 or shortly thereafter, and there was no subsequent activity at Black Point until a few Americans built homes there during the gold rush period.

The theory that Washerwoman's Lagoon was the site of the original Mission Dolores, at least for the winter of 1776-77, does not withstand scrutiny, nor is there any evidence of Russian "activity" of the early 19th century in the area beyond the burial ground on the hill south of the alignment.

Gold Rush Period (1849-1856): North Beach afforded some comparatively level ground for the quickly-growing gold rush city to expand into, and in 1853 Harry Meiggs completed his famous wharf from the shoreline near Francisco Street to deep water at the bulkhead line on Jefferson Street. Pilings (or replacement piles) of this structure will very possibly be encountered by the tunnel midway between Powell and Mason Streets. Meiggs failed and fled to South America in 1854, and the filling of the cove at North Beach during this period did not begin to match the work done in the area of Yerba Buena Cove, either north or south of Market Street. Aside from Meiggs' Wharf, no structure of any kind and no fill was introduced within 150 feet of the alignment.

Structures built on the point west of Leavenworth and on Black

Point itself during this and later periods are relevant to the archaeological potential of the area only as they suggest the general level of activity that might have resulted in the deposit of cultural materials on or near the beach areas at either end of the N-1 tunnel, where they might be uncovered by the open-cut excavations. The total level of this activity was low. There was no activity with respect to the N-4 alignment in the Marina cove or at Sand Point--unless it was strawberry-gathering at the latter.

Late 19th Century, Early 20th Century, North Beach (N-2): The only structure other than Meiggs' Wharf that may be encountered by the N-2 excavation is a pier running about 350 feet west from Mason Street along the line of North Point Street. This structure was built in 1878 and persisted in reduced size until filled in the 1890's. Other than pilings of this wharf and Meiggs' Wharf, the cultural material likeliest to be encountered is debris in the street fill where the six open-cut excavations will be made. The earliest such material may occur in the excavation at North Point and Leavenworth Streets, which at least in part was filled for a roadway around the point in 1864. We have no archival evidence that this fill contained debris, but fill alongside Meiggs' Wharf in the late 1870's definitely did contain a large amount of refuse, as described by historic sources and as shown by recent borings. The fill that will be encountered in excavations at North Point and Kearny Streets, on Stockton Street between North Point and Beach Streets, and at North Point and Powell Streets dates from about 1880 and immediately after, when the first sections of the seawall were completed. The type of cultural material involved is household garbage and presumably garbage associated with the North Beach industries, the most notable of which was the California Wire Works, which occupied the block bounded by Bay, Mason, North Point, and Powell Streets in the 1880's. This debris appears to have been heavily picked over for junk that would fetch anything at the junk dealers, not only by the garbage dumpers, but by the "fossickers" who hung around the beach.

The fill west of Meiggs' Wharf is later than that to the east, with

the exception of the 1864 road embankment at Leavenworth. It should also be kept in mind that dumping at any given site did not continue over a long period. As photographs and maps show, decisions to bring streets up to grade would suddenly bring such activities to an end, though dumping might continue in the surrounded waterlots (which will not be encountered by the excavations) for a longer period.

Late 19th Century, Early 20th Century, Bay Street and Fort Mason (N-1): Only the beach area west of the tunnel under Fort Mason might contain cultural materials that may be encountered in constructing the sewer, as all of the rest of this alignment is a bored tunnel. The open-cut excavation between the tunnel and Laguna Street was originally 10 to 20 feet above low water. Lying within the original reservation, it was undeveloped until the Army Transport Docks were constructed in 1910. It does not appear likely that cultural materials of an earlier date will be encountered, as the surface was graded somewhat downward at this or subsequent date. However, the continuation of this open-cut westward in the N-4 contract carries the excavation across the original shore, where the grade has been raised.

Late 19th Century, Early 20th Century, Marina Boulevard (N-4): There was no development of the beach area adjoining Fort Mason on the Marina Boulevard (N-4) alignment prior to 1882 when the works of the Phelps Manufacturing Company were constructed on the block bounded by Laguna, North Point, Buchanan, and Beach Streets. The alignment transects the Phelps Wharf at about Buchanan Street, as well as the mole for handling coal constructed by the San Francisco Gas Light Company on the west line of Buchanan Street in 1891.

A seawall to enclose the waterlots transected by Marina Boulevard was commenced in 1893. The alignment crosses this seawall (known as Fair's Seawall) at Webster Street and Scott Street. Filling along most of the alignment was accomplished after 1912 to prepare the site for the 1915 Panama-Pacific Exposition. This fill was sand and mud pumped from offshore.

At the west end of the alignment, the sewer transects what was known as Sand Point. The Harbor View resort, opened in 1862, was at the western end of the alignment, while the Fulton Engineering and Ship Building Works occupied the shoreline at Broderick Street. Traces of activity at these sites may be encountered, to the extent that they lie where the grade may have been raised for the 1915 fairgrounds.

Historical Conclusions: The N-2, N-1, and N-4 alignments present a case where quite specific locations harbor not only the best, but almost the only, possibility of encountering any quantity of cultural material. These places, all of them mentioned above, are most clearly seen in references to Map 3 (1877), which shows the alignment relative to the original shoreline. The probability of encountering any more than isolated artifacts deposited earlier than this map is very low, for no filling had taken place along the alignment before this date except at the corner of Leavenworth and North Point Streets. Filling of the cove at North Beach took place in the 1880's and '90's along the alignment, of the cove at the Marina in the 1890's and as late as 1912-13. However, the fact that the alignment does cross the original shore in three places allows of the possibility of finds dating from any earlier periods, although analysis suggests that the probability is extremely low.

M 1~ U.S. Coast Survey, 1859

SPANISH, MEXICAN, AND EARLY AMERICAN PERIODS . . . 1776-1848

A general historical introduction to the Spanish, Mexican, and early American periods, particularly as relevant to activity that might have resulted in deposit of cultural materials along the North Shore and Channel Outfalls Project alignments, has appeared in the previous report on the South Embarcadero and Steuart Street (C-3) contract area and will not be repeated here. However, further description of some of the activities of these periods is appropriate to the particular geographical features of the N-2, N-1, and N-4 alignments.

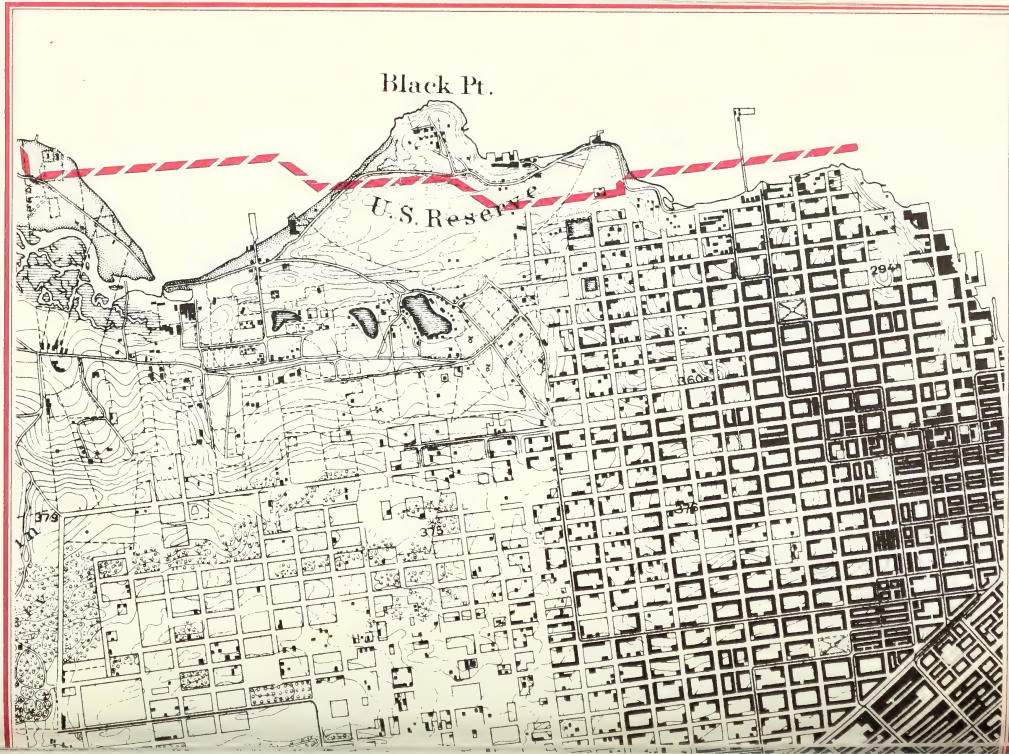
The N-2 alignment is offshore from the former line of North Beach, the hollow between Telegraph and Russian Hills. Just beyond the western end of this contract, the cove was bordered by a sandy point about a hundred feet high which is unnamed on any maps we have seen. The N-1 section of the sewer tunnels under this high ground and adjacent Black Point, originally called Point Medanos, and then Point San Jose when a battery was erected there by the Spanish in 1797. The name Black Point stems from the appearance of the promontory in its natural state, covered with dark scrub laurel. The point rose to elevations of a hundred feet or more. The western side of rocky Black Point devolved into a long beach curving southwestward in the area where the N-4 alignment takes up its course across what we will call here the Marina Cove (though it had no name on maps we have used). High dunes lay behind the beach on the eastern side of the cove. The western side of the cove, where the N-4 alignment terminates, was a low, sandy peninsula known in

American times as Strawberry Island. Early photographs show it largely covered with low foliage, which included the wild strawberries that gave the "island" its name. For most practical purposes the peninsula was an island, being separated from the mainland (and the Presidio) by wandering sloughs and marshland.

In the case of this North Shore alignment, from North Point (Kearny Street and The Embarcadero) to the Presidio (Lyon Street), the construction techniques for long stretches of the sewer severely limit or preclude the possibility of encountering cultural remains, as will be seen by a detailed description of the sewer relative to the original shoreline.

At its eastern end, at North Point and Kearny Streets and the Embarcadero, the alignment lies almost exactly one city block north of the original North Point, where the slope of Telegraph Hill dropped steeply into the bay. A short open-cut excavation on North Point Street adjacent to the N-5 Contract pump station straddles the three-fathom line shown on the 1859 Coast Survey Chart of San Francisco (Map 1). This chart shows conditions as of 1857, and we use it here in preference to the 1853 Chart because the earlier chart extends westward only to Hyde Street. It is necessary to refer to the 1869 Coast Survey Chart (Map 2) in order to find a comparably reliable survey of the shore to Sand Point, at the Presidio. However, as in the case of the 1859 Chart, no improvement had altered the original shoreline relative to our precise needs, and together these charts show the shore as it must have existed in 1776, allowing for perhaps some change in the sands of Strawberry Island, at the western end of the alignment.

It will be seen from Map 1 that except at the very eastern end of the alignment the cove at North Beach was too shallow for anchorage of ships inside the line of the headlands (hence the long extension of Meiggs' Wharf of 1853). According to H. H. Bancroft, Vancouver anchored east of Black Point, presumably off this cove, in 1797, the Black Point-North Beach area at that time bearing the name "Yerba Buena." (Bancroft 1886: v. 1, 702-705) This is, of course, possible, though to us the Yerba Buena Cove of later fame seems more probable. In any event, Vancouver or any later navigator who anchored between Black Point and North Point



12 - U.S. Coast Survey, 1869

did so far to the north of the N-2 alignment. Indeed, the area north of the foot of Leavenworth Street is identified on the 1853 Chart as "Tonquin Shoal," and the unfortunate gold rush packet **Tonquin** is shown as an obstruction to navigation (about halfway between Black Point and the end of Meiggs' Wharf on Map 1, where a dotted circle shows 4-1/2 feet at low water). Thus, the cove at North Beach was not at any time an anchorage in the part transected by the sewer construction. The soundings, both on this and the much more detailed 1857 manuscript chart referred to elsewhere in these reports, show that the N-2 tunnel boring would appear to pass far below the 18th-century bottom level. However, current soil profiles show the mud level to be below that of 1857, probably as the result of compression by the fill; even so, the top of the N-2 tunnel is predicted to be entirely below the fill line except for small "dips" in the mud profile. (See Plate 21 in Appendix for soil profile.)

Curiously, it is at the eastern end of the alignment that the present mud line is closest to the surface—5 to 10 feet below city grade (**i.e., above** the original low water level). The explanation is that bay mud fill was used in this area when the seawall was built in 1879-80. (H. Com. 1879: 13)

The western end of the N-2 alignment is again an open-cut excavation. Map 3 shows this excavation at the corner of North Point and Leavenworth Streets to be right on the original shoreline. But the harbor engineer who made this drawing was working in 1877, by which time a roadway had been filled along the beach. The 1853 and 1859 Coast Survey Charts show the area of the excavation to be over 100 feet from the low water beach line, which vastly reduces the already slight possibilities of encountering materials of a period earlier than the 1860's.

Bay Street and Fort Mason: On Leavenworth Street, the western end of the N-1 Contract sewer begins with a tunnel below bedrock. This deep tunnel goes along the line of Bay Street, then curves below Fort Mason (Black Point) to the line of Beach Street. From the west portal an open-cut excavation extends 258 feet to the west side of Laguna Street. This cut continues westward, across the old shoreline, as part of the N-4

alignment; therefore, we will consider this section of the sewer line from the tunnel portal to Marina Boulevard as a piece for historical purposes.

H. H. Bancroft's comments on Vancouver's 1792 visit suggest that the official Spanish anchorage was under the western side of Black Point, and if this were the case, the beach transected by the N-1 and N-4 alignments would have been the likely landing place, which in turn would raise the distinct possibility of small archaeological finds of considerable interest even if not importance from the standpoint of increasing our knowledge of the culture or commerce of the period to any large degree. Furthermore, the proximity of the Russian burial ground on the hill overlooking this beach might lend credence to its use as a landing. Finally, there is the theory that Washerwoman's Lagoon (about 2,000 feet southeast of the point where the alignment transects the beach) was the 1776 site of the Mission Dolores. One current amateur historian of the locale not only places the original mission at Washerwoman's Lagoon, but has the Russians using the area (and presumably the beach) as the base of "smuggling" operations down through the Mexican period. (Bielski 1975: 1-6)

Bancroft is at some pains to dismiss the argument that the Mission was founded at Washerwoman's Lagoon. (Bancroft 1886: v. 2, 293-294) More recently, the discovery in Mexico City of the annual reports of the Mission prior to 1794 appears to confirm his judgment, for while the reports or report for 1776-77 has not yet surfaced, the 1781 report gives a review of the prior buildings, all of them in the vicinity of the lagoon near Mission Creek. (Geiger 1976: 195-205) The only evidence for any Russian activity—other than burial parties—in the Russian Hill area is the active imagination of the neighborhood historian. The Spanish anchorage was indeed west of Black Point, but it seems certain that it was off the present Coast Guard station near Fort Point. J. N. Bowen, in trying to pinpoint the anchorage, finds agreement for this location from Ayala's Map of 1776 down through William A. Richardson's testimony in the case of the Limantour grant. (Bowen 1946: 319-324)

The likeliest possibility of activity during the Spanish period in the area where the alignment crosses the beach on the west side of Black

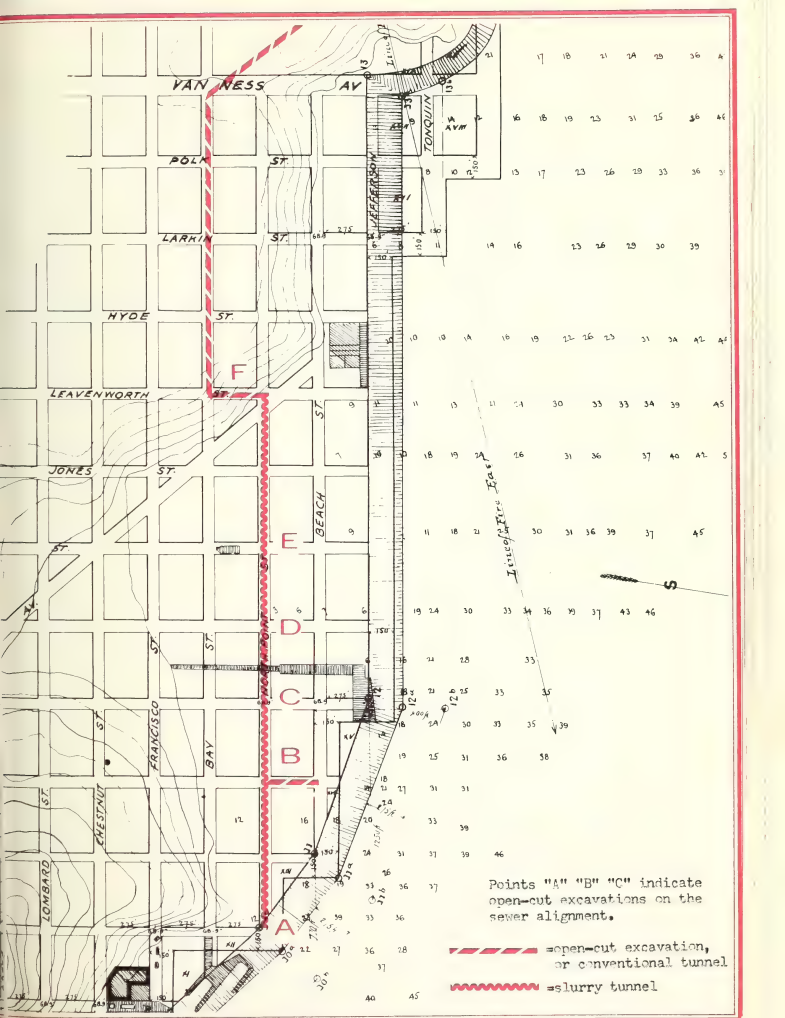
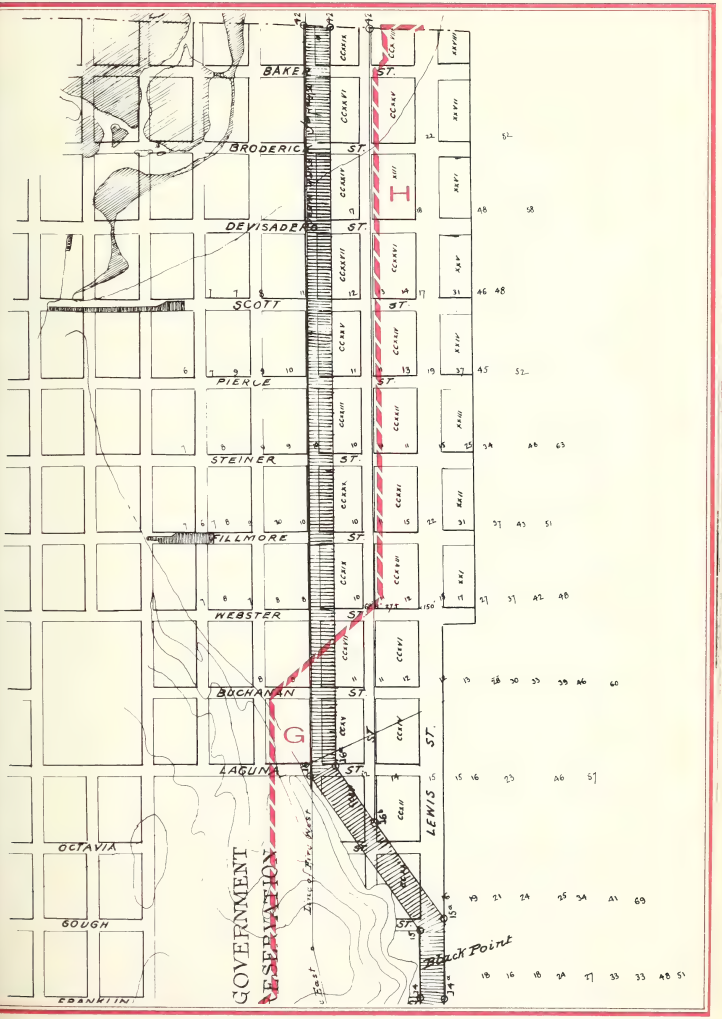


Fig. 3 - State Harbor Commission Ms., 1877, Eastern Part



3-State Harbor Commission Ms., 1877, Western Part

Point stems from the installation of a battery on the Point in 1797 as part of a program to strengthen the harbor defenses in response to Russian and English activity on the Northwest Coast. Mounting five eight-pounders, this battery was in service as late as 1806, for Langsdorff, who was with Rezánov in the **Juno**, was surprised to discover its existence when it fired a salute upon the arrival of Governor Arrilaga. (Bancroft 1886: v. 1, 128) His surprise, incidentally, shows that the Russians had not landed at Black Point. Bancroft finds no subsequent mention of this battery, and 1806 is the date usually given for its abandonment. With regard to the sewer alignment, it would appear from Maps 1 and 2 that the beach could have been used as the shortest route to and from the Presidio. As to the potential traffic, Bancroft remarks, "No permanent garrison was kept there, but at least until after 1800 the works were visited daily by a sentinal, and to a certain extent kept in order." (Bancroft 1886: v. 2, 702) The 1869 Coast Survey Chart (Map 2) shows a road to "Cow Hollow" following the beach in this area, but there is no indication of a road or trail on the 1859 Chart--not surprisingly, as there would have been scant reason for the gold rush residents of Black Point to travel to the Presidio.

Marina Cove and Harbor View: West of the original shoreline at Beach and Buchanan Streets, the N-4 alignment runs northwest along the north side of the present Marina Boulevard to between Webster and Fillmore Streets, where it turns west and follows the north line of Marina Boulevard directly across the former cove to what was the shoreline of Strawberry Island at approximately Broderick Street (see Maps 2 and 3). The sewer "comes ashore" at what was known as Sand Point, which aptly characterizes the original topography. Strawberry Island was a sandspit that dropped off into a tidal slough and marsh separating the Presidio from both the island (actually a peninsula connected to the mainland by a narrow beach to the west) and the bay.

The cove, along the N-4 alignment, reached a depth of as much as 12 to 13 feet at low water, according to a Coast Survey manuscript map of soundings made in 1874, making it definitely navigable for vessels of moderate size—were there any such vessels or any reason for the

navigation. It was too shallow to serve as an anchorage for the sort of ships that called at the port in the 18th or early 19th centuries.

On the other hand, between about Webster Street and Divisadero, the excavation does not reach the bottom as shown by the soundings on the 1874 Coast Survey manuscript map. Soil test borings made in 1975 agree, but are too few to confirm; one boring, at Fillmore Street, shows what appears to be the original bottom exactly at the invert grade, while others are below.

Strawberry Island itself was almost inaccessible before the development of the Harbor View resort at Sand Point in the 1860's, and it is hard to imagine what purpose might have prompted residents of the Spanish, Mexican, or early American periods to undertake the circuitous trek required to get there--other than the curiosity that tends to result in exploration. The beach transected by the sewer excavation from Broderick to Lyon Streets and north on Lyon to the treatment facility was below present city grade and the excavation will be to below original grade; thus it is physically possible that any early cultural materials may be in place and may be encountered.

Plate I: Meiggs' Wharf in 1856 . . . When the photographer Fardon set out to prepare the first comprehensive album of the golden city of the West, Meiggs' Wharf was among the notable structures he catalogued. Here we see Bay Street piled and capped, with waterlots which were unfilled for many years laid out on North Point Street. The island in the background is Alcatraz as it appeared with its first harbor defense batteries. (Eastman House)

GOLD RUSH PERIOD . . . 1849-1857

Meiggs' Wharf: The phenomenal growth of population during 1849, '50, and '51 and the very limited area of fairly level ground at the original townsite gave rise to the idea of development of North Beach, less than a mile from "downtown" and easily accessible through the gap between Telegraph and Russian Hills. In the best American tradition, North Beach was a promotion, in this case that of an entrepeneur familiary known as "Honest Harry" Meiggs. Aside from promoting the North Beach real estate that he acquired, Meiggs was a pioneer lumberman. Mendocino City was founded as "Meiggsville" in 1852, and across the long wharf that Meiggs built at North Beach passed the first of the commerce of the Redwood Coast. Meiggs' Wharf, until the building of the seawall in 1879 the most striking feature of the San Francisco waterfront as seen on maps, was located midway between Powell and Mason Streets, and extended from the shoreline at Francisco Street to the present-day Jefferson Street.

The wharf is variously ascribed to 1852 and 1853. The 1852 Coast Survey Chart (survey information dated February) shows no wharf construction at North Beach other than boat landings. The 1853 Chart, which has no date for the updated information, shows the wharf projected but not completed. It may be that the wharf was commenced in 1852 and completed in 1853.

The N-2 slurry tunnel will probably encounter pilings of this wharf, as it is doubtful that they were removed when the line of the wharf was filled at the place where North Point Street transects it. The area in

which pilings might be expected to occur is between 145 feet west of the Powell Street property line and 195 feet east of the Mason Street line (see Map 3). The pilings are of no particular historic interest and would probably not be piles of the original construction. However, their probable existence and location is of some importance in the sewer construction, as the machinery employed in the slurry tunnel technique will require assistance if it encounters pilings well-preserved in the bay mud.

As can be seen by the scattering of structures in 1857 (see Map 1) and by later maps and views, North Beach did not shape up to the expectations of enthusiasts. The defection of Meiggs in October of 1854 was the first spectacular business failure in the history of the city--and perhaps its most colorful of all time. Overextended by his North Beach promotion, Meiggs was caught sadly short by a business depression and decline in building and property values in 1854. Forced to borrow at ever-increasing interest (up to one percent per day), he not only overissued stock in his lumber operation but launched into an orgy of forging for collateral both private and public notes, the latter being the warrants or scrip that the impecunious city (assisted in its affairs by Alderman Meiggs) issued in lieu of cash. Hours after "Honest Harry" set sail in the brig **American**, "It was reported that he had failed for eight hundred thousand dollars, and when it was announced the next day that he had fled there was a terrific excitement. The holders of Meiggs' warrants rushed to the City Hall, and there many learned that they had nothing save worthless paper as security. They numbered hundreds, and belonged to all classes, including bankers, merchants, city officials, mechanics, draymen, and public women. He had taken advantage of the people to whom he furnished employment, and even his laundress was not spared." (Hittell 1878: 22304)

Both Meiggs' failure and the depressed conditions of the mid-fifties were responsible for the cove at North Beach not being filled during the excitement of the early gold rush boom. Though it has not been noted by previous historians, Meiggs' Wharf was obviously part of a land speculation that went far beyond its use as a lumber landing and a general spur to the increase of commerce and shoreside lot values. Most of the piers of the gold rush waterfront were franchised extensions of the city

Plate 2: North Beach from Telegraph Hill, before 1860 . . . The connecting structure between the N-2 slurry tunnel under North Point Street and the N-1 tunnel under Bay Street and Black Point in the far background is approximately at the shoreline to the left of the high sand dune that dominates this photograph. The exact point is close to the offshore rock that you see at the foot of the sand hill. The covered ship hulk between this rock and the conspicuous white house on the beach was installed on the shoreline between Francisco and Bay Street on about the line of Taylor. It was the early prison brig **Euphemia,** at this time a "receptacle for the insane." The first improvement of the shoreline at Leavenworth and North Point Streets was the construction of the roadway around the point in 1864. (S. F. Maritime Museum)

streets. A notable exception was the first important pier, Commercial or Long Wharf, which was built outward **through** blocks of waterlots between Sacramento and Clay Street, to the great advantage of the partners who owned both the lots and the wharf. But the Long Wharf "just grew," with new lot owners being taken into partnership as it was extended and the wharf line was dedicated as a street as the lots were filled (or built upon) on either side. (Davis 1889: 333-334) Meiggs was clearly trying to repeat this glittering example, but no doubt had the scheme all worked out in advance and owned all of the blocks that would be most directly benefited. The shallow cove would have cost much less to fill than deeper Yerba Buena Cove, and no doubt the work would have proceeded rapidly had he survived financially. Plate 1, taken by Fardon in 1856, shows the wharf area about as Meiggs left it. The building in the foreground is between Francisco and Bay Streets; the uncompleted wharf running across the picture is Bay Street, and does not yet reach Meiggs' Wharf; the short connecting wharf at the right is Stockton Street, as can be seen on the 1859 Chart (Map 1). What the chart does not show is the staked-out waterlots. North Point Street runs between the larger and smaller rectangles of piles. Storms have swept away most of the caps (horizontal timbers) of the fencing around the block north of North Point Street. A dozen years later there was still no fill beyond Bay Street (Map 2).

Plate 2 shows the western side of the cove at North Beach before 1860, perhaps as early as 1857. There was at this time almost no alteration in the original shoreline. The most striking structure visible in this photograph is the roofed-over brig **Euphemia** drawn up on the shore at the center of the photograph. The **Euphemia** had been purchased by the city in the summer of 1849 for use as the first jail. She was originally moored afloat near the storeship **Apollo** at Sacramento and Battery Streets. The outline of this ship at the North Beach location can be found on the Coast Survey Chart of February 1852. She was here used as a "receptable for the insane." (**Alta**, Map 22, 1822) She disappears when the roadway was constructed at this location in 1864. The **Euphemia** is lying approximately on the line of Jones Street between Francisco and Bay

Street about 500 feet south of the N-2 alignment. The intersection of North Point and Leavenworth Streets is between the conspicuous offshore rock and the sand hill behind. The south corner of the building that housed Abe Warner's celebrated "Cobweb Palace" at Meiggs' Wharf is visible at the extreme right.

Bay Street and Fort Mason: Unfortunately, the 1852 and 1853 Coast Survey Charts do not show anything more than the eastern shoreline of the point at North Beach at the foot of Hyde Street. However, it was at this time that the first houses were built on Black Point and at the foot of Russian Hill. The neighborhood historian, Bielski, put the first house on Russian Hill in 1852, the year of San Francisco's first **legal** execution for murder, when the unfortunate Jose Forni was hanged atop that hill in a civic event witnessed by thousands. (Bielski, 1975: 8) In 1853 Leonidas Haskell and George Eggleston built houses at Black Point, where they were soon joined by other "squatters" on this otherwise unoccupied Government Reservation. These illegal occupants were not shanty-dwellers (they included Jessie Fremont), and several of their houses exist today as quarters on the Fort Mason Reservation, having been spared destruction when the Army fortified Black Point in 1863, at the height of its efforts to protect the port from possible attack by Southern raiders. Perhaps two dozen buildings that may be houses (as distinguished from out-buildings) can be seen on the 1856-57 survey (Map I) between Leavenworth Street and the western side of Black Point. The sewer tunnels deep underneath nearly all of the area, but attention is called to their existence and numbers as indicative of the level of activity in the area that might conceivably have resulted in deposit of cultural materials on or just off the shoreline at the east and west portals of the tunnel. As can be seen, activity would have been slight and not apt to result in the deposit of any substantial quantity of cultural materials.

Marina Boulevard: There was no filling of the cove transected by the N-4 alignment during the gold rush period, nor were there any wharves or maritime activity, nor any structures on the beach at Black Point, or on

Plate 3: The Marina District in 1856 . . . Washerwoman's Lagoon was the attraction that brought the photographer out to the neighborhood of Gough and Filbert Streets at this early date. The washing that gave the pond its American name can be seen hanging in the yards of the professional laundries surrounding the lagoon. In the far distance the line of the Presidio barracks can be seen against the then-barren hills. The N-4 alignment crosses the cove at the right, terminating on Strawberry Island, a sandspit covered with low vegetation. (Bancroft Library)

Strawberry Island. However, there was substantial activity back of the shoreline, far to the south of the alignment. An excellent study of 19th century development of the Marina District is found in John Levinsohn's recent booklet, **Cow Hollow** (1976). However, the activity at the close of the gold rush era is summed up in a single photograph, Plate 3. This 1856 view was taken from Gough and Filbert Streets on the slopes of Russian Hill. The newly completed brick fortress at Fort Point is seen in the distance at the far right. Nothing is seen at Sand Point, in the middle distance, the later site of the Harbor View resort. All of the activity of the time is south of the sand dunes of the eastern side of the cove, the sloughs, and the marshes of the western side. In the forground is Washerwoman's Lagoon, with clothes drying in the yards of the commercial laundry establishments that used the spring-fed lake. Just out of sight to the left was an unwelcome user of the same waters—a tannery. Beyond the lagoon, in Cow Hollow proper, a modest dairy industry flourished. In the distance is the Presidio compound, on a flat below the treeless hills. The N-4 sewer line crosses the cove at the far right.

Plate 4: North Beach from Russian Hill, Looking North, 1863 . . . This accurate lithograph of North Beach shows every street, residence, and business in place as it was at a time when Francisco Street was the bay front and North Point Street crossed Meiggs' Wharf (3). Alcatraz (1) was an Army fort, seen directly in front of Angel Island (2). Jones Street (A) and Taylor (B) are crossed by Lombard (D) and Greenwich (C).

A full-rigged ship and a lumber schooner lie at the end of Meiggs' Wharf (3), Abe Warner's Cobweb Palace at the foot (4). Mason (E) and Powell (H) are crossed by Chestnut. The big North Beach brewery (8) was on Francisco (F). The Convent of the Sisters Presentation (5) was the largest building in North Beach, Pfeiffer's Castle (6) the most ornate. The County Hospital (7) was at the edge of the bay; Union Street (10) is shown in the foreground. (Bancroft Library)

NORTH POINT STREET (Contract N-2) . . . Late 19th Century, Early 20th Century

Preliminary reports and correspondence with the North Shore and Channel Outfalls Consolidation Project, as well as almost all of the time at meetings attended by public officers and private consultants toward the end of 1976 and early in 1977, tended to concern themselves with potential archaeological values of the North Beach (North Point Street) section of the entire sewer project. These writings and discussions were animated by the presence of actual cultural debris in test borings on North Point Street and erroneous ideas as to the physical impact of the sewer construction and the antiquity of materials apt to be encountered.

Points of very great importance are that the sewer along North Point Street will be bored by a mechanical process that will not permit careful location of artifacts that might possibly be encountered and that the tunnel goes **beneath** the fill of the cove that has proved to contain debris. Small artifacts that may have sunk deeply into the bay mud or may be contained in "pockets" of fill that appear to extend in at least two short spaces of the alignment down to the depth of the top of the tunnel will be passed through a slurry pumping system and may be found only through examination of millions of gallons of muck.

Not only does the tunnel go beneath the strata of possible archaeological significance, but it passes along a line of much later development and fill than many other parts of the project. Meiggs' Wharf does date back to the gold rush times, but it is singular with respect to

the alignment, and the fact is that garbage deposited on North Point Street dates no earlier than 1880 to the east of Powell Street, and up to 25 years later to the west.

We call attention to the description of Meiggs' scheme for the development of North Beach in the previous gold rush section of this report. How it all looked in 1863 is seen in the superb view on the fold-out page (Plate 4). The artist has obviously shown the maximum possible activity, as well as carefully delineating all structures. The authenticity of the view can be verified by examination of the accompanying photographic plates of the period.

Francisco Street is seen to be the general waterfront line at this time, North Point Street being two blocks out in the bay. The remains of piles marking waterlots in the shallows (see Plate I of 1856) are shown by the artist, while they all but escape the camera. The famous "Cobweb Palace" operated for many years by the eccentric Abe Warner is the building on the left side of Meiggs' Wharf, with the flagpole in front. Abe and the assorted locals are seen in Plate 5, taken in the early 1880's, looking bayward, when the seawall had been built to the east of Meiggs' Wharf and the Crystal Baths were located at about the south line of Bay Street. We have not identified when Warner acquired this saloon (which appears in the 1857 survey, Map I) and turned it into a soda-pop and monkey house that was never cleaned, but the reputation of this "old time" place no doubt accounts for the notion that North Beach was a resort area at some early and unspecified period. In fact, the "resort" character of North Beach in the 1860's through the '80's was confined to minor activity associated with bath houses. These are seen in their fullest flower in the mid-1880's in Plate 6. The area was really characterized, then as now, by an admixture of residential, institutional, business or light industrial uses. As of the date of the 1863 view, none of this activity (except as it might involve the Leavenworth and North Point corner out of sight to the left on the approximate beach line) is at all likely to involve the possibility of encountering remains in the way of the slurry tunnel, for the tunnel goes beneath the cove bottom from right to left of this view about at the point numbered "29" (midway out Meiggs' Wharf).

Plate 5: Abe Warner and his Cobweb Palace . . . The building at the left, which was built alongside the foot of Meiggs' Wharf in about 1854-55, was Warner's "famous resort." The gentleman in the silk tophat (8th from the left) was Warner himself, posing with some Sunday tourists in front of his Cobweb Palace. The Crystal Baths were by this time (the 1880's) in the background, and to the right the wooden companion structure to the Cobweb Palace was in the process of demolition. (Bancroft Library)

This general situation obtained throughout the 1860's and '70's, the shoreline fill moving out by the mid-'70's from Francisco to Bay Street.

We have earlier mentioned the idea of Meiggs to "fill out" the block between Powell and Mission on either side of the wharf, and the progress of this fill by about 1875-1877 can be seen in Plate 7. The photograph gives a good visual impression of how this fill was accomplished, when one considers that it was no doubt done piecemeal, on private lots, rather than by one-shot contract, as in bringing a city street to grade. We have seen a photograph of a painting made about 1881, or immediately after, of the end of the seawall near Meiggs' Wharf that shows (amidst all kinds of vignettes) a drayman dumping a cartload of indeterminate material into a waterlot. No doubt this type of slow filling operation involved deposit refuse as well as earthen matter, and many borings made from 1975 to the present along North Point Street and near the N-5 Contract Pump Station at North Point and Kearny confirm the presence of cultural debris in the fill. What is important here is progress of this type of fill as it may be related to the specific open-cut excavations associated with the North Point Street alignment. The potential value of such materials to historiography we leave to a later section, but we will here point out that we must be dealing largely with cast-out stuff collected from a wide neighborhood at a rather late date.

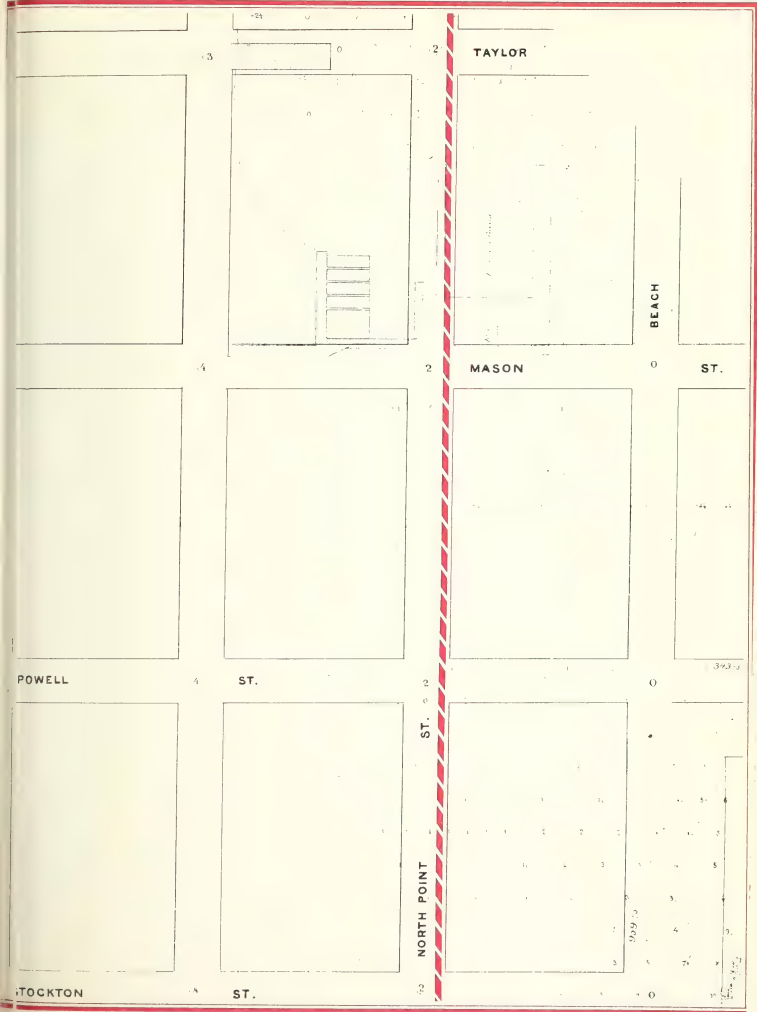
The portion of the 1878 harbor engineer's map labeled Map 3A shows precisely the progress of fill at that date. Bay Street was then the general waterfront line between Kearny and Jones Streets, with the exception of filling on either side of Meiggs' Wharf. From the map it might appear that the low-tide line shown extending out to Beach Street along Meiggs' Wharf could have been the result of silting, but Plate 7 shows that this fill reaches the top of the wharf, probably very close to city grade. However, as Map 3A shows, the fill at this time was not wide enough to reach the areas of open-cut excavation on the N-2 alignment at Powell Street and Mason Street. Therefore, garbage that may be encountered in the excavations at these two intersections will be material dumped no earlier than 1877-78. A description of the original dumping in this area is found in the "Preliminary Draft Report" of Patrick

S. Hallinan and Allen G. Pastron of November 20, 1976: "Charles Walton owned and operated a junk store located on Meiggs' Wharf. During the 1860's, the wharf was used as a runway for the garbage wagons that discharged their cargo into the bay to serve as fill. This constant supply of garbage was a haven for scavengers in search of discarded items of value. Morphy, in his work **San Francisco Thoroughfares,** describes groups of 'garbage fossickers' who made an occupation of rummaging through the trash heaps at low tide. Anything which they found that might have been of value was either carried off or sold at Walton's junk store."

Morphy is not always the most reliable source, but this general description is very likely indeed, and of course imposes severe limitation of the likelihood of encountering much in the way of museum-class artifacts. It is quite possible that the dumping started in the 1860's, but as Map 2 shows, the shore had not advanced to Bay Street by 1867-68.

Section I and Section A of the new seawall that formed The Embarcadero between Kearny Street and Powell Street were begun in September, 1878, and completed in January, 1881. (Dow 1973: Appendix) Fill on Powell Street that will be excavated at the intersection of North Point Street dates from this period. As Plates 8 and 9 show, filling behind the new seawall in this area was not immediate, but continued through the mid-1880's. Fill west of Meiggs' Wharf on the line of North Point Street dates from the mid-'80's at Mason Street. Section B of the seawall was begun in September, 1890, and completed in May, 1893. The fill at Taylor Street appears to be after the completion date.

Influent Structure Excavation on North Point Street near the Kearny Street Pump Station (Point A on Map 3): The excavation at Point A on North Point Street serves to connect the pumping station on Kearny Street with the North Point slurry tunnel. The pumping station has been previously described in the report on the N-3 and N-5 contract areas. This Y-shaped excavation goes down to -45 feet. The centerline of the Y is 21 feet south of the north property line of Kearny, and the excavation of this portion will be about 25 feet wide. The east leg of the Y (towards The Embarcadero) is 20 feet wide; the west leg of the Y (towards the Marina)



Map 3a - State Harbor Commission Ms., 1878

dating back to 1882 and was still intact as late as 1905.

The 1905 Sanborn Maps of this construction area indicate that the Hammond Packing Company owned the small triangular Block 1505, bounded by Bay Street on the south, Kearny to the west, and The Embarcadero to the east. However, there were no structures on either Block 1505 or the triangular lot to the north, Block 1504, as late as 1905.

By 1919, four warehouses had been built on Block 797. Harbor Warehouse #2 was on the corner of North Point and Kearny, Harbor Warehouse #3 butted against it on the corner of Kearny and Bay Street. This latter brick structure held U.S. medical supplies as noted on the Sanborn Map of the period. The triangular lot 1505 had two rectangular structures facing on Kearny Street but the nature of these buildings is not known. Lot 1504 to the north was still vacant by 1919.

Open-cut Excavation along Stockton Street from North Point Street to Beach Street (Point B on Map 3): A 7-foot inside-diameter sewer on Stockton Street will connect the N-2 tunnel with the existing sewer system to the north. The Stockton Street sewer extends from the North Point Street sewer to a point approximately 37 feet north of the southerly property line of Beach Street. Its centerline is 22 feet east of the west property line of Stockton Street. The excavation will be about 10 feet wide and 10 feet deep.

The 1879 harbor engineer's map for the proposed seawall shows soundings on this stretch of Stockton Street of about 3 feet. Plate 9 from the 1883 waterfront panorama gives us a clear idea of how slowly this area in back of the seawall was filled in. The long grain shed on top of the seawall ended with a three-story grain elevator that marked the intersection of Stockton Street and the Embarcadero. The finger of land-fill that reaches out into the big puddle would have been Beach Street just short of Stockton Street. Later pictures of this same area show the gradual filling process still underway in 1887, by which time Stockton Street at this point was now graded, though there was still water on both sides, as shown by the 1887 Sanborn Map HH; by that date the three-story grain elevator at the end of Stockton Street was no longer

is 25 feet wide. The overall length of this massive excavation is about 150 feet.

The 1878 harbor engineer's map shows an L-shaped wharf (known as O'Neil's Dock) at the northwest corner of Bay and Kearny with the shoreline dipping south, slightly, at the North Point and Kearny intersection. To the east was the big Merchant's Dry Dock that appears as a dark claw of wharves on the 1877 Map 3. The block bounded by North Point, Bay, Dupont (Grant), and Kearny was all under water at that time. A large rock surfaced by the L-shaped wharf on Bay and Kearny. Map 3 indicates that the water was 12 to 15 feet deep at the corner of North Point and Kearny. A full discussion of the Merchant's Dry Dock can be found in the report on cultural resources for the N-3 and N-5 contract areas. The west end of the Merchant's Dry Dock on the 1877 Map 3 would appear to be about 80 feet east of the influent structure excavation.

Plate 17 in the N-3 and N-5 report is a birdseye view of this section of the waterfront in 1877, in which O'Neil's small wharf with the big rock just out of the water is shown immediately to the west of the Merchant's Dry Dock. This is an excellent pictorial representation of the site of the proposed influent structure at a time when Bay Street was the city front and North Point Street was still underwater.

Plate 8 shows the Seawall Hotel to the right (1) facing on Bay Street. The edge of the photgraph marks Kearny Street where the excavation (2) would project along the line of North Point. The third section of the 1883 panorama, Plate 9, puts the Seawall Hotel at the far left of the photograph with a big puddle on Kearny Street (1) on the approximate site of the N-5 pump station contract area. As can be seen from these two plates, the contract area was still being filled in 1882-3. The 1887 Sanborn Map GG indicates that things did not progress much beyond the 1883 panorama with regards to structures in this area. The **Seawall Hotel** and the **Stauffer Chemical works** stand alone on Bay Street. The Stauffer Chemical Works manufactured sal soda at a site between Bay and North Point Streets (center of Block 796) in a one-story frame building from 1887 through 1896. The Seawall Hotel appears in pictures

STOCKTON

STREET

Open-cut
"Area B"

798

1503.

Crystallizing Pans
STAUFFER CHEMICAL WKS
(SAL SODA)

MAP GG
Sanborn, 1887
Kearney Street
(N-5 Contract Area)

NORTH POINT

DUPONT

STREET

STREET

1504

SEA

WALL

787

STEP WELL HOTEL

N-5 Pump Station

Open-Cut
"Point A"

KEARNEY ST

BAY STREET

Plate 8: Progress of the Fill in Back of the Seawall, ca. 1881 . . . The Seawall Hotel (1) faced Bay Street. Open-cut "Point A" is at (2), the intersection of North Point and Kearny. (3) Marked the water end of Stockton, and (4) the "canal" on Dupont. (S. F. Maritime Museum)

Plate 9: Progressive Filling behind the Seawall in 1883 . . . This is the view seen in Plate 8, two years later. Notice the point of landfill (1), part of block 1500 on Beach Street. Property owners had now persuaded the city to finish filling Dupont (2). The houses just below Telegraph Hill (3) faced on Bay Street, while at the same time block 795 below North Point (4) was still a very large puddle. (Wells Fargo History Room)

in use. Simpson Brothers Lumber Company had lumber stacks all over the end of the seawall. There were no structures of any kind within 100 feet of the Stockton Street excavation.

By 1905 a few businesses began to appear along Stockton Street between North Point and Beach Streets. On the west side of Stockton the **Fisher Packing Company** had a vinegar and pickle works (established in 1896) on the northwest corner of North Point and Stockton. Golavel and Gale had the **North Beach Manufacturing Company** occupying the corner of Stockton and Beach Streets on the west side. This company, established in 1892 on this site, did woodworking, planing, and machine work, and used the corner across the street on the east side of Stockton and Beach for a storage area. The rest of the east side of Stockton between Beach and North Point Streets still stood empty as late as 1905.

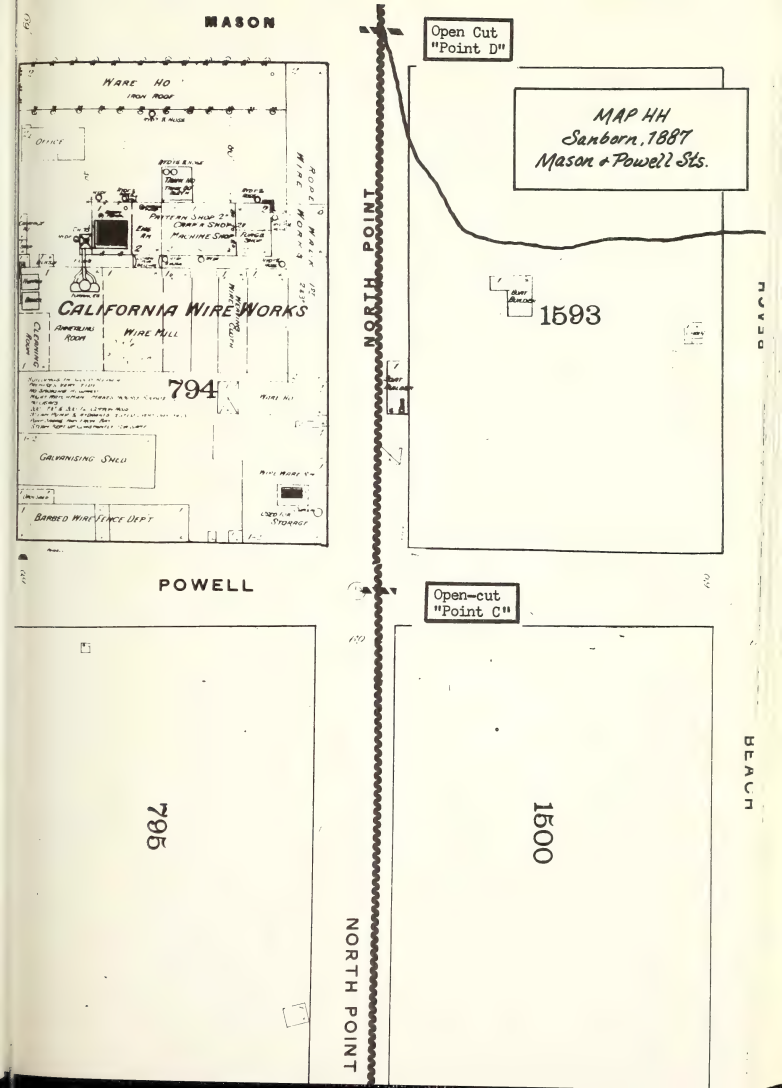
The 1915 Sanborn Insurance Maps, updated to 1919, show the east side of Stockton between North Point Street and Beach Street to be entirely occupied by the big **Otis Elevator Company Factory.** Their two-story brick building included a machine shop along Stockton, a planing mill around on North Point and an office at the corner of Beach and North Point. Stockton Street on the west side no longer contained the businesses of earlier years but now was scattered with open stacks of lumber belonging to Tiernan and Beronio.

Open-cut Excavation at North Point and Powell Streets (Point C on Map 3): The intersection of North Point and Powell Streets will have an excavation to connect the existing sewer system to the North Point slurry tunnel. The excavation runs 30 feet north and south on Powell and about 20 feet across the intersection. The 20-by-30 foot excavation will be about 10 feet deep, with an additional 10-foot shaft that reaches down to the slurry tunnel. The 1878 harbor engineer's map indicates that this intersection was at that time under water, with soundings of less than a foot. Meiggs' Wharf can be seen on Map 3 between Powell and Mason Streets. The fill to the east of Meiggs' wharf was considerable, as seen on the 1878 Map, but had not yet reached this intersection at Point C. Plate 7 shows the filling at Meiggs' Wharf at about this date. Sanborn

Map HH (1887) shows this intersection to be filled but with no structures on three of the four corners. The southwestern corner was occupied by the extensive California Wire Works of A. S. Halladie, which is described below. By 1893 the **Union Box Factory** was added on Powell Street about 80 feet northwest of Point C. At this time lumber was stacked on North Point Street which was also used as a storage yard for barrels and flasks. The box factory was a two-story frame building that adjoined a smaller woodworking factory on Beach Street belonging to the **California Ventilated Barrel Company.**

By the turn of the century the canning, packing, and pickling businesses began to move into this area and land was still cheap enough to use for lumber yards. In 1897 the **Federal Can Company** put up a large factory on the west side of Powell between Bay and North Point. This factory extended around the corner on North Point Street. It was still in operation as late as 1905. Across the street to the north, the **Simpson Lumber Company** owned the entire block and used it for lumber storage. The Simpson Brothers were pioneer San Francisco lumber merchants whose headquarters were on the Steuart Street wharf at Pier 11 as early as 1864. the company was as late as 1905 still using this Powell Street area for open stacks of lumber from the Pacific Northwest. The east side of Powell between North Point and Beach Streets was also used as a lumber yard at this time, but the ownership is less certain. The block to the south, bounded by North Point and Bay, was still vacant in 1905 and did not begin to build up with business until 1911.

Open-cut Excavation at North Point and Mason (Point D on Map 3): Another open-cut excavation on the N-2 alignment occurs at Mason and North Point Streets. At the street intersection the excavation runs 30 feet north and south and is 20 feet wide, extending down for about 10 feet with a center shaft continuing to the slurry tunnel along North Point Street. Again referring to the 1878 harbor engineer's map, we find a large wharf at this intersection. The wharf does not appear on the 1877 engineer's map (Map 3), and was apparently still under construction when the 1878 map was drawn. The structure extended along the west side of


MASON
WARE HO
IRON ROOF
OFFICE
PATTERN SHOP 2d
CRATE SHOP
MACHINE SHOP
CALIFORNIA WIRE WORKS
ANNEALING ROOM
WIRE MILL
794
GALVANISING SHED
BARBED WIRE FENCE DEPT
STORAGE
POWELL
NORTH POINT
Open Cut "Point D"
MAP HH
Sanborn, 1887
Mason & Powell Sts.
1593
Open-cut "Point C"
795
1500
NORTH POINT
BEACH

792

61B

1589

MAP II
Sanborn, 1887
Taylor Street

61-A

792

1589

Open Cut
"Point E"

TAYLOR

NORTH POINT STREET

SAN FRANCISCO BEACH

793

1591

OLD WHARF

Mason Street from the north line of Bay Street to about midway between North Point and Beach Streets. At the centerline of North Point Street the eastern side of the wharf was approximately 24 feet east of the western property line of Mason Street. The largest part of this structure was a rectangular wharf running about 350 feet eastward from the west line of Mason Street. The southern side of this wharf lay on North Point Street, the easterly 120 feet of it taking up almost the entire street; beyond that point it took a more northerly line, the south edge of the pier being approximately 40 feet south of the northerly line of North Point Street. This 350-by-215-foot structure occupied about one third of the block bounded by North Point and Beach, Mason and Taylor Streets.

Map 3A, a manuscript map apparently made by the harbor engineer's office in preparation for construction of the first sections of the new seawall begun in 1879, shows this wharf in better detail than any verbal description can provide. The map is undated, but it is obviously subsequent to Map 3 (1877), and a scribbled note on the outline of a new Union Street wharf over the old one reads "Build this wharf, June 5/78." Thus the map would appear to date from at least early in 1878.

On the south side of North Point Street, just to the south of this wharf, was another smaller platform with a row of five two-story structures with small sheds facing the wharf. By the time of the 1887 Sanborn Map II the wharf had been considerably reduced in size but still occupied about 160 feet along North Point Street. By 1893 a boat builder had a small two-story workshop on the wharf (designated now as "the old wharf") and the row of two-story structures had been given street numbers on a small alley called "Alaska Street." This same 1893 map shows Mason Street ending in the bay, with a new small pier jutting out from the old wharf with the **Golden Gate Sardine Packing Company** occupying most of it.

As can be seen on the 1887 Sanborn Map HH the **California Wire Works** had a large plant that occupied all of the block bounded by Mason, Bay, North Point, and Powell Streets. A two-story brick warehouse ran the length of Mason Street, with an adjoining two-story building on North Point. The works on this site were built around 1884 and were still operating here as late as 1900. A. S. Hallidie, the inventor of the cable

car, had started in the wire rope business in San Francisco as early as 1857 when he supplied the needs of "mining companies, ferrymen and shipmasters" with all kinds of "iron, steel, and copper wire ropes, strands and cords." His 1868 ad informed San Franciscans that "wire rope does not shrink or stretch in changes of weather. It weighs 40 percent less than hemp; is less than one-half in diameter; it is as easily spliced under all circumstances; is as pliable for equal strength, and is from three to five times as durable as the best of hemp or manilla rope. It is almost exclusively used throughout the principal mining regions and by leading shipowners and thirty years of experience has tested its merits and proven its great economy and superiority over any kind of rope." (Langley 1868-69: 13) We are not certain as to the precise location of Hallidie's early "North Beach" works, but by 1884 the city directory indicates the plant was at Bay and Mason. By then his custom had been expanded to include the cable car industry in San Francisco and elsewhere. The ad contemporary to our Sanborn Map shows that the California Wire Works' big specialty was barbed and "California cactus" wire for fences.

Across North Point Street on the north side in 1887 the shoreline curved towards Beach Street. This beach is important to us because among the various "boat builders" to use this site was **Charles G. White.** White was listed in the San Francisco city directories usually with his home address on Lombard Street but occasionally with the "Foot of Mason" as his shipbuilding address. We find him here in 1887. His ways also appear on this site in the 1884 Coast Survey Chart. Various early photographs locate his shipways just to the east of the point B excavation--perhaps as close as fifty feet. Plate 10 shows the building of the big ferry boat **Encinal.** The **Encinal** was launched in 1888. In the foreground two schooners are under construction. The distinctive cupola of the U. S. Barge Office at Powell and Jefferson Streets is seen beyond the **Encinal.** The first "steam schooner" on the Pacific Coast was built at White's North Beach yard in 1883. As the boat and ship builders moved about according to the particular needs of various launching sites and the filling of beaches and changing shorelines, they frequently are not precisely located except as particular launching days or shipbuilding activities were

Plate 10: White's Shipyard at North Beach, 1888 . . . Charles G. White was North Beach's most notable shipbuilder. Here the ferry **Encinal** is ready for launching, while two schooners for the coastal trades are on the stocks. Given the configuration of the shoreline in the photograph, it would appear that the stern of the schooner in the foreground would lie at or very close to the intersection of Mason and North Point Streets. (S. F. Maritime Museum)

recorded by early photographers. Certainly the presence of three boat builders within a radius of 200 feet around this Mason and North Point intersection would indicate the extensiveness of maritime activity from the early 1880's on this site.

By the turn of the century the intersection of Mason and North Point Streets had been filled. The site of the **Golden Gate Sardine Packing Company** wharf was now filled in and the **Pacific States Pipe Wares** had erected a building on the northwest corner of Mason and North Point Streets in 1904. Across the street were the extensive lumber stacks of the **Simpson Brothers,** who owned the entire block. In 1913, the west side of Mason, south of North Point Street, was occupied by **Healy and Tibbets** stables, where they kept 48 horses and operated a blacksmith shop and a construction storage yard on the southwest corner of the intersection. On the east side of Mason, the **Central California Canneries** had a factory built in 1907 on the site of the former California Wire Works factory.

Open-cut Excavation at North Point and Taylor (Point E on 1877 Map 3): The north-south open-cut excavation on the line of Taylor at the intersection of North Point on the N-2 alignment is similar to those at Powell and Mason Streets. Again referring to the harbor commission engineer's 1878 map (Map 3A), we find shallow soundings of 1 foot and 1/2 foot at the intersection. This same map shows a short wharf on Taylor Street (about 50 feet wide and 150 feet from the foot of Taylor) that falls about 200 feet short of the Point E excavation. By 1886 the Sanborn Map II shows that this wharf had become part of the fill as the shoreline had been extended to within 150 feet of the proposed excavation. An updated Sanborn Map of 1893 of this same site shows the area as still only partially filled, although a bowling alley and saloon have been added at the corner of Taylor and Bay Streets alongside what was the old Taylor Street Wharf.

The 1905 Sanborn maps of this area indicate that the fill has progressed all the way up Taylor Street past Beach Street, but the western side of Taylor is still under water past North Point Street. Block 793 is now entirely filled in. The southeast corner of Taylor and North Point

Street is owned by the **LeDue Tule Import Company**, which manufactured life preservers and stored them at this warehouse in 1909. The northeast corner of North Point and Taylor was owned by the **Phoenix Lumber Company**, which had a lumber storage shed on the corner.

Open-cut Excavation at Leavenworth and North Point (Point F on Map 3): This open-cut excavation on the N-2 alignment extends approximately from the centerline of the intersection of Columbus and North Point around the corner of North Point and Leavenworth for a distance of 128 feet. The curved excavation is 20 feet wide and over 30 feet deep, going down through fill, bay mud, and bed-rock.

As projected on the 1859 Coast Survey Chart, the site of this excavation is off the original shoreline (see Map 1). The shore was filled out for the construction of a road in 1864. This road and fill can be seen in Plate II. Plate II was made in 1865, looking toward Meiggs' Wharf from about Leavenworth and Bay Streets. Francisco Street is the street along the shore. Map 3 (1877) suggests that the original shoreline was at the intersection of North Point and Leavenworth Street and the harbor engineer's map of 1878 shows a line labeled "Sand Hills" extending to the east side of Leavenworth at North Point Street. The 1877 and 1878 maps do not agree precisely with each other as to the location of the original shoreline, and they may both be in error. However, there is also the possibility that the street survey shifted slightly from that shown on the 1859 chart (Map 1). In any event, the excavation definitely goes through the shoreline area as it existed in 1867-68 (see Map 2).

Map JJ of the 1887 Sanborn Maps shows the site of this proposed excavation. Note that Columbus Avenue was then called Montgomery Avenue. The irregular shoreline has been just slightly filled beyond the 1877 line. About 50 feet east of the excavation a wooden walkway led to a dressing room for swimmers that was built on pilings out into the bay. A two-story saloon and dressing room was 150 feet to the north—also on pilings. Plate 6 shows us precisely the scene in about 1884. The white frame building to the left with its high-windowed cubicles is the dressing room for swimmers. It was located on the line of North Point

HYDE STREET

789

NORTH POINT

790

MONTGOMERY

Open-cut
"Point F"

LEAVENWORTH

791

AVENUE

STREET

791

STREET

MAP JJ
Sanborn, 1887
Leavenworth + Bay
(Eastern part)

1586

Plate 11: North Beach, Looking toward Telegraph Hill, 1865 . . . The new road connected the Black Point area with North Beach, bending near the corner of Francisco and Jones Streets. Fill for this road will be encountered by the excavation at Leavenworth and North Point Streets. (Bancroft Library)
Plate 12: The North Beach Front in 1908 . . . The building at the center is now "The Cannery," and occupies the site of the Selby Smelter. As of the visit of the Great White Fleet, filling of the western side of the cove was complete to Jefferson Street. (California Historical Society)

Street. The small scatter of houses on pilings are the dressing rooms and saloons further out along Columbus Avenue towards **Shelby's Smelter and Lead Works** located out on the point of Beach Street and Jefferson. By the time of the 1886 Sanborn Maps the smelter was abandoned and the buildings were to be removed.

The historic smelter was started in 1865 by Thomas Selby for the processing of gold and silver ore. (Bancroft 1890: v. 7, p. 65) Selby was perhaps more famous for his Shot Tower, a South of Market landmark, but this important North Beach refining plant handled the base bullion products of the silver mines using the "Pattinson" process, which agitated and strained the molten mass of base bullion, separating the lead from gold and silver ore yielding about $400 a ton at the time Hittell described the operation in 1882. (Hittell 1882: 303-305) The base bullion would have been brought to his smelter by boat at the small wharf to the north (just outside of our picture). The Selby Smelter operated in this location from 1865 to 1885. The excavation at Point F on the N-2 alignment is well over 600 feet south of the smelter. The sandhills along Columbus and Leavenworth can be seen in Plate 6 with a scattering of houses up the hill above Leavenworth towards Hyde Street.

After the 1906 earthquake and fire, the **California Fruit Company** built a warehouse on the smelter site with an adjoining cannery on Block 1585. These large brick buildings face on Jefferson Street and run through to Beach Street. The **Cannery**, as it is called today, has been restored by private parties and the **Haslett Building** was purchased by the State of California in 1962 to become a museum for the people of California. The two buildings can be seen in Plate 12 the day the Great White Fleet sailed into San Francisco Bay in 1908. At the time of this report the Haslett Warehouse Building has been transferred to the National Park Service to become part of the Golden Gate National Recreation Area. Neither building will be impacted by the sewer construction as they are over 600 feet from the alignment.

The North Point and Leavenworth intersection remained much the same up through the turn of the century. The 1905 Sanborn Maps still show the same dwellings on the southwest corner of Leavenworth and

North Point, dating back to 1857. One of the boat houses on Columbus, just north of North Point on the bay side, was still in operation in 1905, although the structure dated back to 1878. The shoreline came up to Columbus Avenue on the east side of the street below North Point. Block 791, to the west of Columbus, did not begin to build up until the 20's and 30's although Charles Koenig & Sons owned the center of this triangular shaped block and erected a building there in 1907.

BAY STREET AND FORT MASON (Contract N-1) . . . Late 19th Century, Early 20th Century

Introduction: The following description of historical development along the N-1 alignment, from approximately Leavenworth and North Point Streets to Bay Street to the west side of Fort Mason, is from "A Preliminary Report on Cultural Resources of the Contract N-1 Segment," by Ann S. Peak & Associates (1977). Material in the original Preliminary Report relating to the Spanish, Mexican, and American periods through the gold rush (1776-1856) has been expanded and consolidated with other information and analysis on previous pages. The original Preliminary Report does not trace development at Fort Mason subsequent to the dispossession of the private residents when the Army asserted its claim and fortified Black Point in 1863, since the N-1 sewer is a tunnel that will not encounter any trace of this subsequent activity. However, we append a brief note on the construction of the Transport Docks at the west end of the alignment, where a 258-foot open-cut excavation extends from the tunnel portal west to Laguna Street.

The Bay Street portion of the alignment is entirely a conventionally bored tunnel, although there is an open-cut excavation (part of the N-2 contract) at the eastern portal near Leavenworth and North Point Streets. The excavation appears to transect the "new" shoreline created by the building of a roadway along the beach in 1864. Thus, while none of the structures described below nor any cultural remains of their occupancy

can be encountered by the Bay Street tunnel, the type and level of development and activity is relevant to the potential of encountering cultural materials at the beach level on Leavenworth Street. See addendum on N-2 excavation on Leavenworth and North Point (Point F on 1877 Map 3), the connecting excavation between the N-4 and the N-2 contract areas.

Bay Street: It was not until the 1860's, San Francisco's "Golden Age," that Russian Hill began to be settled in earnest. One of the early owners was Captain David Dobson who erected an observatory platform at Lombard and Hyde. (Bielski, 1975:9) Dobson charged 25¢ admission to those wishing to enjoy the spectacular view. Other inhabitants of the hill between the 1860's and the 1880's included such prominent names as George and Phoebe Hearst (along with their young son, William Randolph), the French consul, Le Breton, Judge James Carey, and Senator Frank Soule (the historian). During this time, the top of the hill was characterized by a scattering of houses and gardens. (See Plate 2 for the earliest view of these San Francisco homes.)

In the early 1860's, a squadron of Russian ships had been sent to San Francisco as a gesture of good will to President Lincoln. Several sailors died and they were buried in the cemetery on Russian Hill.

Toward the end of the nineteenth century, Russian Hill began to develop into a haven for Bohemians. George Sterling, the noted San Francisco poet who ultimately took his own life, frequented the area. "A small bench in the single tiny park left on the hill is a memorial to him and to the hill that was." (**Ibid.**:14)

The project alignment crosses only the northern margin of the hill, an area that was not particularly important in the early history of the hill. The tunnel alignment also does not cross areas of bay fill, this section of Bay Street being on land that has been above water throughout recent geological times. The easternmost extension of the Contract N-1 area does closely approach the original shoreline and parts of the lots lying north of Bay Street and west of Leavenworth do lie on fill. The 1859 USCS map (Map 1) indicates the original shoreline in this area while the 1903 map shows the area filled, permitting the extension of Columbus

Plate 13: East from Black Point, ca. 1868 . . . The area known today as Aquatic Park was an early industrial site. At the left was the Selby Smelter. To the right of center was the Pioneer Woolen Mills (ca. 1858); the largest of the brick buildings still stands as part of the Ghirardelli Square complex. The line of Bay Street was marked by the houses (left of center) at the upper edge of the sand dunes. (San Francisco Maritime Museum)

Plate 14: Bay Street and Fort Mason, ca. 1867 . . . Scarcely developed Bay Street lay between the camera and the roadway connecting Fort Mason with North Beach. At the center and right the road roughly follows the line of North Point Street. (Bancroft Library)

who owned the remainder of the latter block, is listed as having resided at the southern end of Larkin Street (No. 822). These nonresident owners may be assumed to have bought their property as an investment with little intention to improve upon it until some future time.

This assumption becomes more valid when one considers some of the other property owners along Bay Street in 1894. These included H. E. Bothin, vice-president of the Judson Manufacturing Company (structural iron parts) who resided at 1630 Jackson Street; Anson P. Hotaling, president of A. P. Hotaling Company Incorporated (liquor importers and jobbers); and the C. Walker and Talbot Investment Company, of Great Fire fame. None of these owners were residents of their Bay Street property and it is clear that the four blocks adjacent to Bay on the western half of the alignment were largely owned by investors and speculators who did not improve the property. Exceptions to the rule included Mr. J. H. Brickwedel, who operated a grocery and liquor store at the corner of North Point and Larkin Streets, and Mr. O. H. V. E. Len. de Bretteville, a language teacher who resided at 912 Francisco Street.

As mentioned above, the two blocks north of Bay Street between Larkin and Leavenworth were included in the Sanborn Maps of 1886 (Map JJ) and are shown as being relatively heavily built up on the 1903 USCS map. These blocks were heavily subdivided, most of the small parcels having frontage along Bay Street. These parcels probably belonged primarily to middle-class working people. For instance, the **Directory** indicates that Asmus Hansen, who had a small lot at 856 Bay Street, between Larkin and Hyde Streets, was an assayer for the Selby Smelting and Lead Company. A Cristin Hansen, probably a relative of Asmus's, owned a similar small parcel on the block between Hyde and Leavenworth Streets. The Sanborn Map of 1886 indicates that there was a "boarding and lodging house" on the northeastern corner of Larkin and Bay Streets.

In summary, all of this indicates that the two northeastern blocks of the Bay Street section above the tunnel alignment were used as a middle-class residential area in the two decades between 1880 and 1900. The eastern of the two blocks was the first to develop. The houses were wooden frame houses with brick chimneys. None of these structures was more than two stories high. Water was supplied to these two blocks by

Avenue from its former terminus at Leavenworth to Beach Street.

The USCS charts of 1857 and 1859 show five buildings along the block between Leavenworth and Hyde and Bay and North Point Streets. Four of these were adjacent to Bay Street and the other was situated in the northwest corner of the block. The block to the south of this, between Bay and Francisco Streets, was transected by a path to the Presidio and Chestnut Street. Bay Street is also shown as an unpaved path on these two charts. Moreover, the only portion of the Bay Street "path" that even existed at that time was the stretch between Larkin and Hyde. Larkin was the only extant north-south street intersecting with Bay and it was also an unpaved path along this portion.

The USCS chart for 1884 (Map 4) shows a few more structures located in the block adjacent to the southeasternmost portion of the Bay Street alignment (see also Plate 9). However, only two structures are situated immediately adjacent to Bay Street. The Sanborn Maps of San Francisco (Map JJ) indicate that these were frame structures with brick chimneys. However, of the eight blocks adjacent to the Bay Street alignment, the 1886 Sanborn Maps cover only the two on the northeast (between Larkin and Leavenworth north of Bay Street), suggesting that there were no insurable structures on any of the remaining property adjacent to the Bay Street alignment in 1886. The **Handy Block Book of San Francisco** (1894) supplies evidence to support this conclusion. This document shows how the lots were divided and to whom they belonged in 1894. Only the northeasternmost blocks (i.e., the ones covered by the Sanborn Maps) have been heavily subdivided into small parcels. In fact, these have been divided into fourteen or fifteen separate parcels while none of the remaining six blocks have been subdivided to this extent.

Moreover, brief investigation of the kinds of people who owned the property along the alignment in 1894 has proven to be informative. **Polk's San Francisco Directory** for 1894 indicates that none of the three owners of the two westernmost blocks resided on their property. Lucy H. Kittle, owner of the block north of Bay between Van Ness and Polk, is not listed in the **Directory** while Alviniza Hayward, who owned most of the lot to the south, is listed as a "capitalist" residing in San Mateo. Thomas Brown,

VOLUME ONE

LARKIN

STREET

798

798

NORTH POINT

BAY

HYDE

STREET

789

780

MAP JJ
Sanborn, 1887
Leavenworth + Bay
(Western Part)

SEE VOLUME

a six-inch water main that tied into a north-south main running down Hyde Street. (See addendum on excavation at Leavenworth and North Point, Point F on the 1877 Map 3.)

The two blocks that lie along the southeastern margin of the alignment have not yet been discussed. The first of these (between Larkin and Hyde) was owned by the Spring Valley Water Works in 1886. This company built a reservoir on the southern half of their block (this still exists in modified form). The reservoir was of particular interest to the Sanborn Company for obvious reasons. The frontispiece to their Volune I (1887) indicates that the reservoir had a capacity of some 6,712,000 gallons and that water was supplied by a 20" pipe and discharged through a pipe of the same diameter. The maximum elevation of the reservoir was 139 feet. This reservoir is shown on the USCS chart of 1903 but does not appear on the chart of 1884. The northern half of the Spring Valley Water Works' block, adjacent to the alignment, has never seen residential development due to the steepness of the slope. This is the present site of Russian Hill Park.

One block remains to be discussed, namely that adjacent to the reservoir on the east. The USCS charts of 1884 and 1903 both indicate structures on this block though they are not included in the Sanborn Insurance Maps until 1927. Like the blocks to the west of Larkin, this particular block seems to have been owned by nonresidents for the most part. The **Handy Block Book of San Francisco** indicates that the property belonged to Ida Kennedy, A. Ulm, Jennie C. Bull, and the San Francisco and Fresno Land Company in 1894. A handwritten note in the copy at the Bancroft Library indicates that Jennie Bull sold her property to the Sharon Estate Company, probably around 1903. Even in 1903, the only structure existing along the Bay Street front of the block was a house on the property of Ida Kennedy.

The section along Bay Street between Van Ness and Leavenworth was one of the few areas of San Francisco situated east of Van Ness that escaped destruction in the fire that followed the 1906 earthquake. Nor did the area suffer heavy damage from the earthquake itself (cf. map at the back of G. C. Gilbert **et al.**, 1907). Since the fire left the

area relatively undisturbed, it continued to develop as a residential area throughout this century.

The two westernmost blocks, between Van Ness and Polk Streets, remained almost entirely undeveloped until 1926, when the Galileo High School was built on the block south of Bay Street and the boys' and girls' gymnasiums and the football field for the high school were located on the block north of Bay Street. This high school, which was constructed of reinforced concrete, exists today. It was shown for the first time on the Sanborn Fire Insurance Map of 1927. (Vol. I, sheets 96-97)

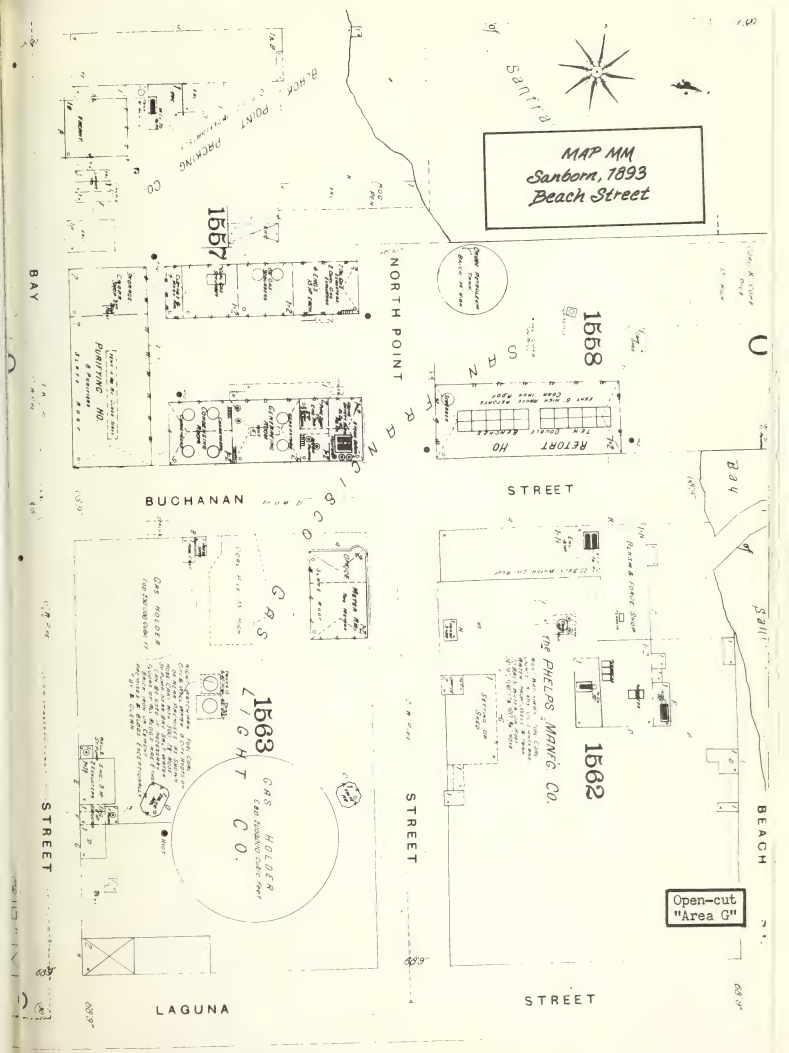
The same map shows that the two adjacent blocks on the east had become the sites of wooden frame apartments and houses. The northwest corner of the block south of Bay Street between Polk and Larkin is shown as having a large apartment building with its front on Polk Street. The portion of this block with its front along Bay Street was occupied by frame houses that were separated in the middle of the block by a small court ("North View Court").

Apartments were also situated along Bay Street to the north. These structures are also wooden structures with the exception of a forty-one-apartment building on the southeast corner of Bay and Polk Streets.

Sheet 82 of the 1927 Sanborn map shows that the Spring Valley Water Company's Francisco Street reservoir is still located south of Bay Street between Larkin and Hyde. The reservoir is now slightly modified. Its southernmost wall has been moved northward, making the reservoir more narrow than it had been. The same sheet shows that the block to the east of the reservoir (between Hyde and Leavenworth Streets) is now the site of frame flats (Numbers 791, 769-779) separated by empty lots.

The remaining two blocks, those between Larkin and Leavenworth to the north of Bay Street, are shown on the 1927 Sanborn Map as being the sites of frame houses. These cover the entire front along Bay Street except for the southwestern corner of the block between Larkin and Hyde which is shown as being empty.

In 1964, the Sanborn Company published an updated version of their 1927 edition. Comparision of the two demonstrates that the changes that took place along Bay Street between 1927 and 1964 are very slight.



Fort Mason U.S. Military Reservation

Ownership of the reservoir has been transferred from the Spring Valley Water Works to the Municipal Water Department of San Francisco. A large store has been added on the block between Polk and Larkin north of Bay Street, but its frontage is on North Point Street. Finally, the empty lots on the southeasternmost block (between Hyde and Leavenworth Streets) have been built up with frame apartment buildings, the flats shown in 1927 having been torn down.

Open-cut excavation alongside Beach Street from the west tunnel portal to Buchanan Street (Section G on Map 3): The N-1 Contract includes a 258-foot open-cut excavation for a box sewer west of the portal of the tunnel beneath Fort Mason. This box sewer continues westward along the north line of Beach Street from Laguna Street is the N-4 Contract. These adjoining segments from the west portal to Buchanan Street are an open-cut across the natural beach and shoreline in this area. The excavation will be about 20 feet wide to an average of 24 feet below city base.

The 1892 Sanborn Map MM shows that portion of Beach Street from Laguna to Buchanan at a time when the shoreline dipped in south of the proposed N-4 alignment in front of the **Phelps Manufacturing Company.** A small wharf was built out into the bay near the foot of Buchannan Street, leading diagonally out from the blacksmith and forge shop of the Phelps Company. William S. Phelps and William H. Phelps started their screw bolt works in 1879 with offices at 13-17 Drumm Street. The location of their original plant is not known but in 1882 the city directory first mentions a factory at Black Point, which would be the site bounded by Laguna to the east and Buchanan to the west. North Point Street marked the southern side of the block and Beach Street--at that time literally the beach of this part of San Francisco's waterfront--the northern side. In addition to manufacturing screw bolts, both William S. and Augustus E. Phelps are listed as shipsmiths in the city directories from 1879 up through 1897. Their blacksmith and forge shop was about 150 feet south of the excavation shown as section G on the 1877 Map 3 and seen as a heavy dotted line on Map MM. The excavation crosses the wharf that they used as well as the beach adjoining the blacksmith shop.

The 1893 Sanborn Map shows part of the mole owned by the **San Francisco Gas Light Company**. The alignment will cross diagonally across this mole to the northwest. In 1893 the wharf measured about 360 feet across and over 600 feet long. The retort house was located at the base of the wharf on the northwest corner of North Point and Buchanan Streets. Just diagonally across the street was the company office, a two-story brick building with a slate roof and a curving bay window overlooking the Buchanan and North Point intersection. The office of the gasworks is all that is still standing. It is over 600 feet south of the N-4 alignment and will in no way be impacted by the N-4 excavation. For a full background on the San Francisco Gas Light Company, see the C-3 report.

By 1903 the gas works mole had been extended to 1,000 feet. By 1915 it had become part of the fill for the fair and was covered by railroad tracks installed for the use of the exposition. The 1919 Sanborn Maps show the site of the former Phelps factory had become part of the Sierra and San Francisco Power Company's steam plant facing on Beach Street between Buchanan and Laguna. The big gas holder of the San Francisco Gas Light Works was still intact below North Point and Laguna and all of the blocks to the east were then labeled "Site of the Panama Pacific Exposition." The shoreline at this time dipped southward into what is still called Gashouse Cove, cutting into the block bounded by Beach Street to the south and Jefferson Street to the north.

The western beach area of Fort Mason was undeveloped until the building of the **Transport Docks** in 1910. Plate 15 shows us exactly how this area looked just as it was being changed to the present-day arrangement. The photograph was taken January 17, 1910, and shows the bulkhead for the Transport Docks being constructed in the foreground, approximately along the line of Marina Boulevard. The cameraman was located at the eastern extremity of the original sand beach, where the rocky shoreline commenced near the line of Gough Street. At the far left is the large brick structure of the United Railways power plant (later Sierra and San Francisco Power). The alignment runs along Beach Street—approximately on the beach—to the right of this building. It then turns northwestward at Buchanan Street (the far side of this building) and cuts

Plate 15: The Shoreline at the Transport Docks, 1910 . . . The N-4 excavation cuts through the original shoreline at the far left in this photograph. It runs diagonally to the right through the earthen mole of the San Francisco Gas Light Company in the middle distance. It then crosses the cove (in this view enclosed by Fair's seawall) to the Fulton works, following approximately the line of the bulkhead being constructed in the right foreground. (S. F. Maritime Museum)

diagonally across the old mole of the San Francisco Gas Light Company. Plate 15 shows the rock retaining wall around this earthen fill. The retaining wall is a much less formidable structure than the Marina seawall north and west of it. The alignment transects this seawall on the line of Webster Street and again at Scott Street in the distance.

HARBOR VIEW (Contract N-4 . . . Late 19th Century, Early 20th Century (By Dr. David Van Horn)

Introduction: Harbor View (the modern "Marina" District) is a zone stretching from the eastern boundary of the Presidio to the western boundary of Fort Mason. It was slow to develop relative to areas closer to Yerba Buena Cove and was not even settled until 1860. After that time, Harbor View became the site of recreational facilities and some industrial plants. By 1912, Harbor View had been chosen as the site for the Panama Pacific International Exposition. Construction of the Exposition grounds entailed eradicating almost all of the earlier industrial structures. However, the legacy of the Exposition was to insure that Harbor View would remain a recreational area during the twentieth century.

Essentially, then, the history of Harbor View can be broken down into three phases:

1. Early industrial development (second half of nineteenth century).
2. Panama Pacific Exposition (early twentieth century).
3. The Marina, recreational area emphasizing small boat facilities (early twentieth century to present).

We shall deal with the cultural resources of Harbor View in terms of the three phases outlined above. Discussion of each of the phases will begin with an historical outline. The outline is followed by a detailed account of the location of each of the archaeological features that lie within 150 feet of the alignment. After citing the features, any known land-filling

operations are noted. The description of each phase ends with a section describing the possible archaeological nature of the fill and features.

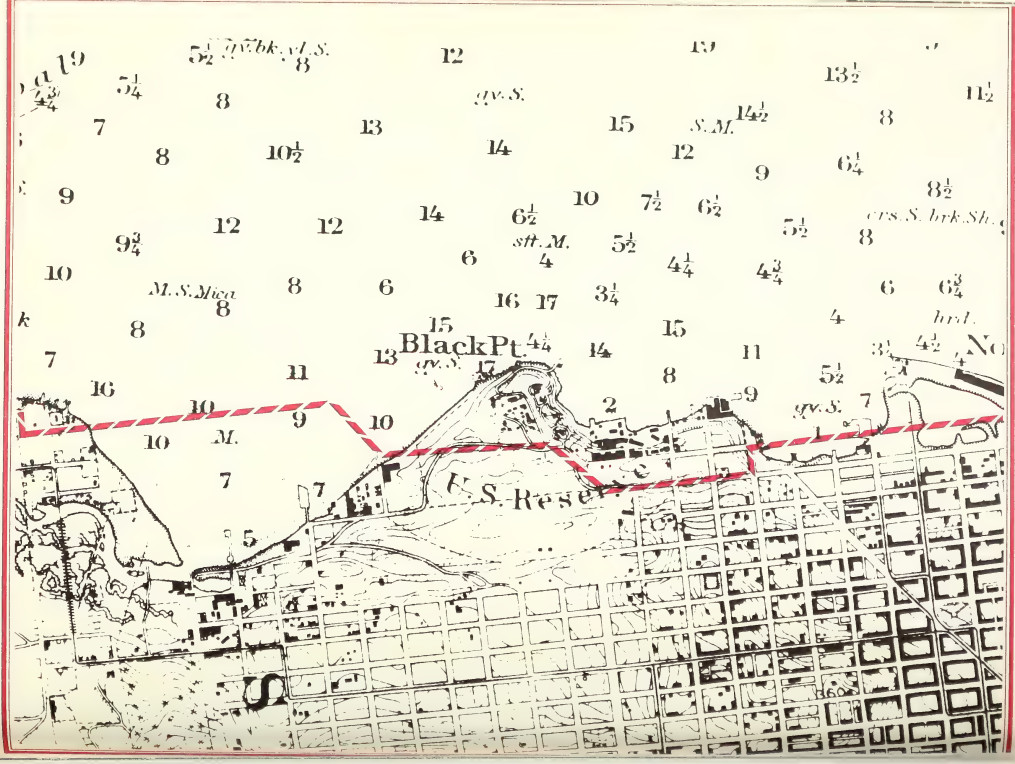
Early Development of Harbor View Historical Outline: Prior to the Panama Pacific Exposition, Harbor View was a cove (Map 3). The western (lowland) portion of this cove comprised a tidal slough, the northernmost part of which became an island at high tide. (Strawberry Island, R. P. Clark in C. L. Camp and others, 1942, n.p.; Dow 1973: 88) The eastern half of Strawberry Island is shown on Map 3.

The geology of the tidal slough consisted of sand that had been washed up onto the surface by the surf. Underlying the sand was an extensive peat bog. (Davidson 1862: 70) Prior to the development of the area by man, this peat bog could be seen protruding from beneath the sand at low tide.

Harbor View was not a part of the original land of the City of San Francisco. It and much of the land south of it were added to the city in 1851 when the territory became known as the "Western Addition." (Dow 1973: 91) However, none of the land at Harbor View was developed until 1860. At that time, Rudolph Herman purchased property on the eastern edge of Strawberry Island. He named the area around the cove "Harbor View" and constructed a recreational area on the property. (R. P. Clark in C. L. Camp and others, 1942, n.p.)

With the exception of the extreme western and eastern ends, the entire zone of the N-4 alignment lay under water in 1860. And indeed, the shoreline as of 1867-68 was still unimproved except for several piers (see Map 2). Most of this underwater property was first sold in 1864 when the Tide Land Commissioners granted all of the tidelands bounded by the Presidio, Tonquin Street (Marina Boulevard), Webster Street, and Lombard Street to the Northern California Homestead and Railroad Association. (Dow 1973: 94) Following this grant, only the submerged blocks of tideland lying north of Tonquin Street remained. These were sold by auction in 1873. (ibid.)

Partial development of the shoreline above high water mark had taken place prior to the Tide Land Commissioners' sale. This included the Pacific Distillery Plant (Chestnut and Pierce), the Fillmore Wharf



AP 4 - U.S. Coast Survey, 1884

(foot of Fillmore Street, 1863), and a small wharf built off Sand Point by the Santa Cruz Power Company.

It was not until the 1880's that any heavy industry came to Harbor View. The first large company in the area was the Phelps Manufacturing Company, which set up a plant for manufacturing rail cars and cables in 1882. (Langley 1882: 771) The Phelps Company was followed by the San Francisco Gas Light Company in 1891 (coal-gas manufacturing plant) and the Fulton Engineering and Shipbuilding Company in 1893. Details regarding the location and nature of these operations will be discussed below (also see Addendum on Section G).

In the early 1890's, James Fair, the well-known silver king, devised a plan to fill submerged lots in Harbor View and build an industrial park on the reclaimed land. (Lewis 1947: 175) Fair died in 1894 before his plan could completely materialize. However, a seawall intended to retain the fill was constructed around Fair's property in 1893. The enclosed, submerged property was later filled by the Panama Pacific Exposition Company. (Dow 1973: 101) See the Exposition section for details regarding this fill.

Features along the alignment: The most fundamental features transected by the alignment are the old shorelines of Harbor View Cove. These will be crossed at the extreme western and eastern ends. On the western side, the Marina Boulevard alignment should cross the old shoreline approximately 760 feet east of its intersection with Lyon Street. Therefore, the original shoreline will be transected by the alignment at the corner of Broderick Street and Marina Boulevard. On the eastern end, the alignment will cross the original shoreline approximately 440 feet west of the western edge of Laguna Boulevard or at the approximate center of the Beach Street block between Buchanan and Laguna.

The earliest structures in the Harbor View area were those built by Rudolph Herman in 1864. The **Handy Block Book of San Francisco** shows that Rudolph Herman owned lots to the north and south of Tonquin Street. (1894: 245-246, lot numbers 561, 563) These lots are traversed by the Lyon Street segment of the alignment. (Overlay Block Map, Alignment,

and Parcel Ownership Sheets)

R. P. Clark, writing in 1942, recorded his recollection of Herman's operation. Clark recalls that Herman had built "a restaurant, a dance pavilion, bath houses and hot and cold salt water tub baths, and dressing rooms for those wishing to swim in the bay." (1942, n.p.) Plate 16 is a view of Herman's resort in the 1880's. Herman also had an 800-foot shooting gallery, which can be seen in the accompanying wood-cut. A survey map that he commissioned in 1898 shows that the Lyon Street alignment would lie directly over the site of Herman's shooting range. This map also shows that the western side of the right-of-way for modern Lyon Street was bounded by a government fence in 1898. (See also, the 1893 Sanborn Map LL.) At the north end of the shooting gallery, where it intersects with Lewis Street, there was a structure for the backdrop for the range. The western terminus of the alignment lies on the site of this backdrop. The bathhouses stood to the east of the alignment's terminus, the nearest being about 80 feet away. The octagon dance pavilion was located towards what is now the southeast corner of the intersection of Baker Street and Marina Boulevard (about 120 feet south of the alignment). Herman's photo tent stood about 70 feet to the south of the alignment between Lyon and Baker Streets. The bar and dining room faced on Jefferson Street, near the Harbor View car tracks. Finally, Herman had a small building (unidentified) located about 20 feet south of the alignment and 120 feet west of Baker Street.

Over the years, there were several methods of transportation to Herman's establishment, the first being a horsecar line built by Henry Casebolt. The historic balloon cars were first operated on this line, which approached Herman's property along Baker Street. The line originally terminated at the corner of Baker and North Point Streets. Clark notes that after the balloon cars were discontinued three of the defunct car bodies were placed in the ground on Herman's property and used as booths for his restaurant on Jefferson Street.

In the early 1880's, the Presidio and Ferries Railroad opened a cable line to Harbor View. This was later extended into the Presidio and it is known that at that time the line entered Harbor View along Baker Street.

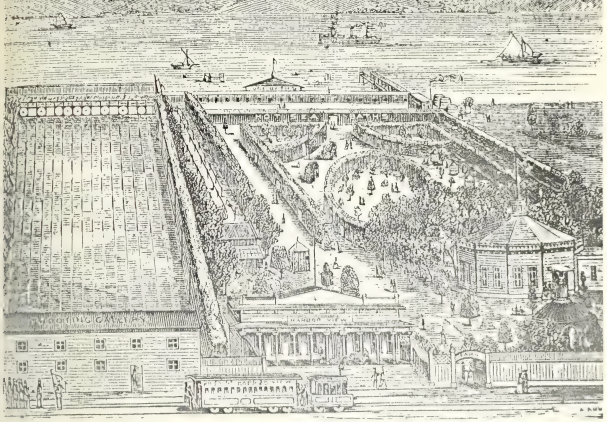


Plate 16: Hermann's Harbor View Sea Baths in 1884 . . . This crude woodcut is accurate as to the details of this long-lived resort. Harbor View faced on Jefferson Street. The alignment would cross beyond the grove of trees and transect the mid-section of the shooting range.

Plate 17: Harbor View in the 1880's . . . This section of a Watkins panorama shows Sand Point on Strawberry Island before the building of Fair's Seawall in 1893. (Both views, California Historical Society)

The Baker Street segment of the line is visible on the United States Coastal Survey Chart for 1884 and may also be seen on Langley's **San Francisco Directory Map** (1895). It is labeled a "Steam R. R." on the later map, the steam line being the extension of the cable road into Harbor View proper. The railway was located one block south of the alignment at its closest point.

Herman's establishment lasted through the turn of the century, until 1913. (Clark 1942 n.p.) Herman's landscaping survived through 1915, when it was used in the gardens of the California Building. (R. P. Clark, 1942: n.p.) The latter structure was built on the northernmost of the lots belonging to Herman. It is probable that Herman's buildings were among the more than 80 structures destroyed by the Panama Pacific Exposition Company to clear the way for its exhibitions.

The alignment turns eastward on Marina Boulevard (Tonquin Street) from its intersection with Lyon Street. Moving from west to east, the first blocks adjacent to the north and south sides of Tonquin were those belonging to Herman. East of these were two blocks between Baker and Broderick that were heavily subdivided among many owners. (Block Book, 1894: 245-46, numbers 559-560) Parcels of the block south of Tonquin belonged to Herman, J. G. Fair, and many other private owners. There were many small private buildings situated on this block.

The block north of Tonquin between Baker and Broderick was subdivided into eight parcels. The southwest corner belonged to Herman, but he never built on his portion of this block. The California Powder Works had a storehouse in the middle of the block, but this was situated 75 feet north of the alignment (Map LL). On the southeast corner were five small buildings belonging to H. Wilson, J. Mile, B. Kleige, and M. Collins. These were private residences. The N-4 alignment will transect two of these small dwellings that were located on Tonquin Street in 1893 (see Map LL, 1893).

The Fulton Company owned the northeast parcel of the above-mentioned block as well as the two blocks to the east, which are adjacent to the north side of Tonquin (Sanborn Map KK and LL). Its engineering and building facilities were located on the western half of these three

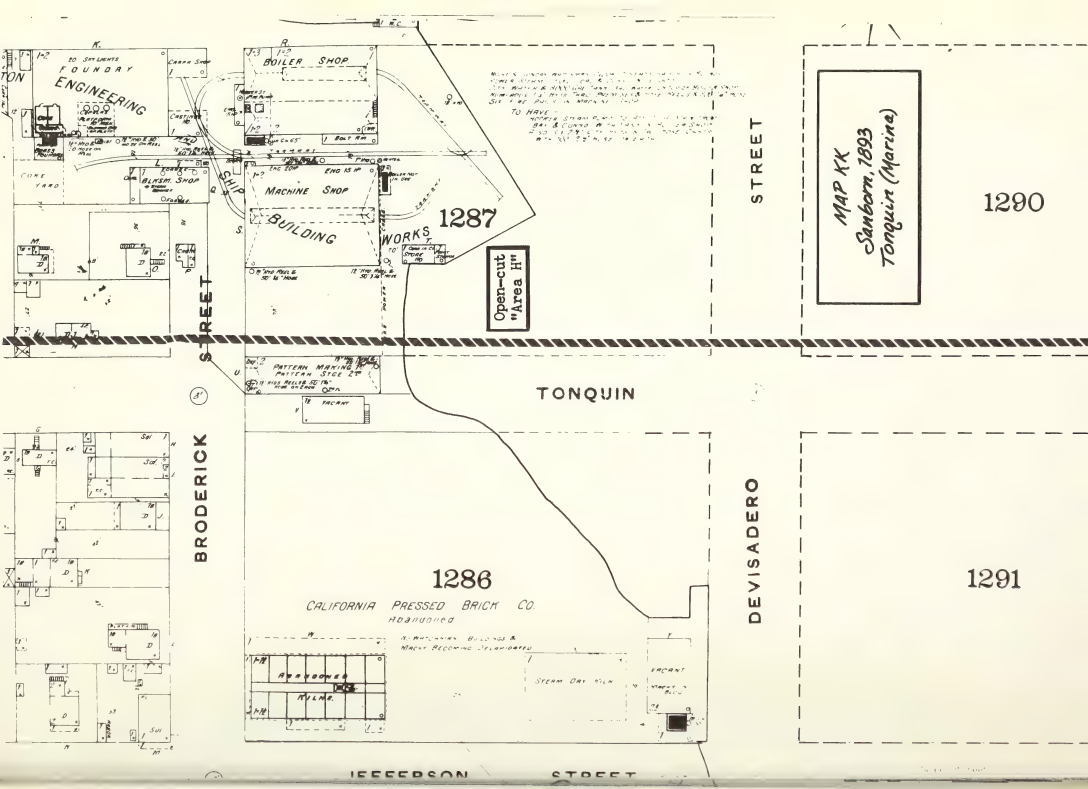
blocks, while the eastern half (from midway between Broderick and Divisadero to Scott) was submerged. The Fulton Company's pattern-making and storage facilities were located on the alignment at the intersection of Broderick and Tonquin. This building was destroyed by the fire resulting from the explosion on the **Progresso** in December, 1902.

The submerged blocks owned by the Fulton Company were used as a turning basin (Block Map and Map LL). James Fair's seawall (see below) later served as the enclosure for the southern perimeter of the Fulton Company's turning basin. Dow makes the following remarks regarding the function of the turning basin: "The submerged portion of the property was used to launch ships and receive vessels, and for loading and discharging materials and equipment used in the company's operation." (1973: 95) For a fuller discussion of the Fulton Engineering and Shipbuilding Works see Addendum, Intersection of Broderick and Marina (Tonquin), Section H on 1877 Map 3.

The block to the south of Tonquin between Broderick and Divisadero belonged to the California Pressed Brick Company. This company's principal buildings were situated in the southern half of the block, well off the alignment.

The shoreline block and the submerged block south of Tonquin and between Broderick and Scott Streets were owned by James Fair (Block Map and Parcel Ownership Sheet). Fair also owned all of the water lots on the north side of Tonquin from Scott Street to Webster with the exception of a 400-foot right-of-way belonging to the city (Block Map and Ownership Sheet). The center line of this 400-foot-wide strip lay over the center line of Fillmore Street. It was the right-of-way for the Fillmore Wharf built in 1863. The wharf was only 400 feet long and it is clear from the USCS chart of 1903 that the actual wharf terminated hundreds of feet to the south of the alignment even though the city maintained the right-of-way into the water lots of the cove (Block Map).

In the early 1890's, James Fair decided to build a seawall around his submerged property in order to retain fill for a new industrial park. This seawall was completed, but Fair died before the fill could be placed. Still his seawall proved singularly responsible for the filling of Harbor


FOUNDRY
ENGINEERING
BOILER SHOP
MACHINE SHOP
BUILDING
WORKS
1287
Open-cut "Area H"
STREET
MAP KK
Sanborn, 1893
Tonquin (Marine)
1290
TONQUIN
BRODERICK
1286
CALIFORNIA PRESSED BRICK CO.
ABANDONED
DEVISADERO
1291
JEFFERSON
STREET

Presidio U.S. Military Reserv

LYON STREET

HARBOR

1180

1181

PARK

PAVILION

SHIP WAY

BAKER STREET

TONQUIN

1185

1184

MAP LL
Sanborn, 1893
Broderick & Baker Strts.

LEWIS

ENGINEERING

BUILDING

BROADWAY

BRODERICK STREET

CALIFORNIA

View Cove, since the Exposition Company eventually filled it in a manner similar to that which Fair had planned. The seawall is visible on the USCS chart of 1903. It began at the southeast corner of Fair's shoreline lot between Broderick and Divisadero south of Tonquin (Block Map). From there it ran north up Divisadero to Tonquin. It turned east along Tonquin for one block and then north up Scott to the line of Lewis Street. The Fulton company's turning basin was north of this portion of Fair's seawall.

At the corner of Scott and Lewis Streets, Fair's seawall turned east on Lewis and continued east to Webster Street, where it turned south. The seawall ran south from Lewis Street along Webster to North Point Street, where it met the shoreline.

Relative to the alignment, the seawall begins one block to the south at the corner of Jefferson and Divisadero. It meets Tonquin (Marina Boulevard) at the intersection of Tonquin and Divisadero. The seawall then goes east along Tonquin for one block, after which it turns north and leaves the alignment at the corner of Tonquin and Scott. The centerline of the alignment should lie approximately sixty feet north of the centerline of Fair's seawall along this block; thus, the excavation might encounter the northern toe of the wall. The seawall then continues east one full block north of the alignment but paralleling it perfectly. At Webster Street it turns south and transects the alignment again at the corner of Webster and Jefferson. This is the last contact between the seawall and the alignment. The evidence strongly indicates that Fair's seawall will be transected by the alignment where the latter meets Webster Street (between Tonquin and Jefferson). The alignment should first hit the seawall on the western margin of Webster Street about 180 feet north of the northwest corner of the intersection of Webster and Jefferson Streets. See the Appendix for Howard Livingston's account of the precise nature of the construction of the seawall in 1893.

An 1899 map of projected sewer systems for the City of San Francisco indicates that the city planned to put a sewer line in Fair's seawall. (Grunsky 1899) This sewer line would have joined the seawall at the corner of Divisadero and Tonquin (Marina Boulevard) and then followed the seawall as far as the corner of Webster and Tonquin.

Other sections of sewer planned in 1899 may also exist along the alignment. Grunsky's map shows that sewers were projected for the right-of-ways of both Broderick and Scott Streets. These would both be transected by that portion of the alignment that runs along Marina Boulevard. A "relief outlet" was projected for the Broderick Street sewer at the corner of Broderick and Marina Boulevard.

The portion of the alignment that travels southeast from a point midway between Fillmore and Webster to the corner of Beach and Buchanan will transect the pier built by the San Francisco Gas Light Company in 1891. (Dow 1973: 96) This pier, which was approximately 200 feet wide, extended from the corner of Beach and Buchanan Street to a point slightly north of Tonquin. It lay adjacent to the west side of Buchanan Street. The alignment will cross the site of this pier in the northeast corner of the block bordered by Jefferson, Beach, Webster, and Buchanan. (Block Map and Map 3.) See Appendix for a description of the building of the gas company pier.

The estimated point of contact is 190 feet east of the southeast corner of the intersection of Webster and Jefferson. The alignment will transect the pier for a distance of approximately 350 feet and will leave the pier about 20 feet north of the northwest corner of Buchanan and Beach Street. Property adjacent to this southeast-northwest oriented section of the alignment belonged to the San Francisco Gas Light Company or to James Fair, but almost all of it was under water in 1903, as indicated by the USCS chart of that year.

The last block of the alignment that remains within the N-4 contract zone runs east-west along that portion of Marina Boulevard that follows the old alignment of Beach Street. This is a one-block-wide stretch bordered by Buchanan on the west and Fort Mason on the east. The **Handy Block Book of San Francisco** shows that the blocks adjacent to the north and south sides of the alignment were owned by the Phelps Manufacturing Company. (1894: 170, numbers 250-251) The Phelps Company built its plant on the southern block, but all of the structures lie more than 140 feet off the alignment except for the easternmost building, which was situated 130 feet away at its closest point. (Sanborn Map MM, 1893)

The northern block belonging to the Phelps Company was tideland except for the southeast corner. It was not built upon at that time. The pier of the Phelps plant is transected by the alignment at approximately the east line of Buchanan Street, as can be seen on the 1893 Map MM. For a fuller discussion of the Phelps Manufacturing Company and the shipsmith activity associated with the Phelps brothers see Addendum, open-cut excavation along Beach Street from Laguna to Buchanan (Section G on 1877 Map 3).

The Fill: Almost no filling took place along the Harbor View alignment during the nineteenth century. Although Rudolph Herman may have introduced some fill onto his property for purposes of leveling and stabilizing foundations and/or for landscaping, no record of such action exists.

James Fair used some fill—rock from the San Bruno Mountain quarry, brought in by barge, and sand from the dunes behind the Marina--in building his seawall and filling in his submerged lands. This activity is precisely described in the Appendix, "Filling in the Marina and Fair's Seawall." The construction of the 1,000-foot coal barge mole by the San Francisco Gas Light Company also entailed filling.

Structures along the N-4 Alignment: The portion of the alignment along Lyon Street, which overlies the property once belonging to Rudolph Herman, is unlikely to encounter any actual structures from Harbor View's early phase. The alignment lies over Herman's shooting gallery (Map LL). This was an 800-foot open tract except for a structure at the north end which was the target backstop. It was an informal frame structure, in front of a sand hill, all traces of which would have been removed by the Exposition Company when it cleared the ground. It is doubtful that any remains of Herman's establishment will be found along the alignment except for possibly a few cartridges or spent bullets from the shooting gallery.

No structures should be encountered by the alignment between Lyon and Divisadero on Marina Boulevard, although the N-4 alignment passes

through the Fulton Entineering Company and its turning basin. It is possible that scattered artifacts might be encountered in the line of the ways and turning basin shore although information describing the continuous dredging necessary to keep the sand from silting up the basin greatly reduces the possibility of finding materials at the former bottom of the turning basin. (See Addendum on Section H on Map 3.)

The portion of the alignment that follows Marina Boulevard from Divisadero to Fort Mason will undoubtedly encounter several structures dating from the period being dealt with in this section. The alignment may encounter the top of Fair's seawall between Divisadero and Scott on Tonquin Street for a distance of about 550 feet. (The construction is described in the Appendix below.)

Fair's seawall will be transected by the alignment again near the corner of Webster and Jefferson. This time, the alignment will meet the seawall at an oblique angle. About 100 feet of the seawall should be exposed.

It is also known that the City of San Francisco planned to put a sewer in Fair's seawall and it is possible that this will be found when the seawall is encountered. However, at the time of its planning, this particular stretch of sewer was regarded as low priority ("not recommended for immediate construction," Grunsky Map, 1899).

The coal loading pier of the San Francisco Gas Light Company was situated about 250 feet to the east of the seawall. This structure was an earthen fill surrounded by a rock retaining wall. (See Appendix below)

Most of the alignment in Harbor View was under water in 1903. The entire zone was land by 1915. This remarkable change in the shoreline took place as a result of the Panama Pacific International Exposition, to which we shall now turn.

The Panama Pacific International Exposition Historical Outline: The Panama Pacific International Exposition was first proposed by R. B. Hale in 1904. (Dow 1973: 98) However, it was a number of years before specific plans could be drawn up. The whole idea was to honor this country's achievement in the construction of the Panama Canal, and it was only

Plate 18: The Marina District, 1912 . . . Part of a panoramic view of the chosen site of the Panama-Pacific Exposition, this photograph shows the comparatively slight progress of filling behind Fair's seawall prior to the construction of the 1915 Exposition. The defunct Fulton Engineering and Shipbuilding Works are to the far left, the gas works and Army Transport Docks at the far right. (California Historical Society)

natural that other cities vied with San Francisco for the privilege of hosting the Exposition (particularly New Orleans). However, San Francisco organized an Exposition Company which raised over $6,000,000, and another $10,000,000 was raised by bonds and special state taxes. (ibid.) Due to its financial commitment, San Francisco was chosen by Congress as the site for the Exposition. This was in 1911, four years before the Exposition was actually to open.

The Exposition Company then had to choose a site. Harbor View was ultimately selected for several reasons. In the first place, the area had never been fully developed in the past and therefore acquisition of land was relatively easy. Secondly, a great deal of the land was owned by absentee landlords and leases could be signed by resident relatives, thus greatly facilitating the letting of unimproved property. Finally, military reservations lay to either side of Harbor View and it proved possible to get federal permission to use these lands.

Ultimately, the Exposition grounds covered 635 acres. Fourteen of these belonged to Fort Mason, while 287 were a part of the Presidio (all federal property). The remainder was private or city property. Preparation of the grounds entailed the razing of all of the old homes and buildings on the site, filling the tidelands up to the bulkhead line along the front of the city property, and filling the marsh located within the Presidio boundaries. By 1913, some 80 buildings had been torn down at Harbor View and the few remaining were in the process of being demolished. (Todd 1921: I, 302)

The Fill: The alignment being dealt with in this study does not extend into Presidio land and this report will not deal with that portion of the filling activities.

Filling of the city property began in the area enclosed by James Fair's seawall. (Dow 1973: 100-101) Two dredges were used to pump the fill. One of these was the suction dredge "John McMullin," the largest in the bay: "The fill material was pumped up from a depth varying from thirty to fifty feet, through a twenty-two-inch pipeline floated on pontoons. The pipe connected the dredge with the fill area behind the seawall a

distance that varied from 600 to 2000 feet, depending upon the area to be filled." (Dow 1973: 101)

The nature of this fill is a matter of some interest. It seems that the natural bottom of the cove at Harbor View was composed of "semi-fluid" sludge. (Todd 1921: I, 300) The Exposition engineers were afraid that this material would settle if fill were simply placed on top of it (great difficulties due to settling had been encountered when fill was simply placed on top of the marshlands of Mission Bay back in the 1850's). In order to obviate the problem, the engineers came up with a clever idea. They left an opening in Fair's seawall through which the sludge could be squeezed by the pressure of the overlying fill that was to be placed upon it. The fact that the Marina lands seem solid even today attests to the success of their scheme.

Great attention was paid to the nature of the fill itself, "The engineers were quite finicky about the sort of mud they got, and when inspection shows too high a percentage of soft material and not enough sand that would stay put, they directed change of ground for the dredge . . ." (Todd 1921: I, 299) Unfortunately, Todd does not say from what precise offshore area the sand came, although he does note that the fill averaged about 70 percent sand and about 30 percent mud. (ibid., 300)

Structures along the Alignment: The alignment of Contract N-4 follows a path that runs north-south along Lyon Street north of Marina Boulevard and then turns east and follows Marina Boulevard to Fort Mason. This alignment transects the Exposition grounds along what was then a walkway known as the "Esplanade." Therefore, the right-of-way for the Esplanade (or Tonquin Street) later became that of Marina Boulevard.

Prior to entering into a discussion of individual Exposition structures, a few general remarks regarding them are in order. The planners of the Exposition conceived of their grounds as a "walled city," an entity in itself and unlike any other. Therefore, they drew up a general format for color schemes and construction materials that was to be adhered to in the building of all of the principal structures erected by the Exposition

Company.

The architect for all of the Exposition Company exhibition "palaces" was W. B. Faville of San Francisco. Faville drew on a number of Mediterranean and South European architectural styles (particularly Moorish, Byzantine, and Romanesque) and combined them into his own hybrid, which was characterized by rounded domes, large expanses of undecorated walls, and very elaborately decorated portals. (Macomber 1915: 27) This Mediterranean style was regarded as appropriate since the Exposition was being held in California.

Structurally, the buildings were erected on huge steel frames founded on pilings (presumably the latter were of wood). The frames were sheathed in wood which was then stuccoed over. The stucco was a special material developed by Paul Deniville to resemble travertine (this report henceforth refers to this stucco as "imitation travertine"). (ibid., 40) The appearance of travertine was important because the architects of the Exposition wished to imitate the materials used by the Romans during the period of Augustus—that is, they wanted their structures to look massively monumental.

In addition to uniformity of architectural style and building material, the Exposition palaces also employed a uniform color scheme. The colors selected fit into the range of warm Mediterranean pastel colors and included French green, oxidized copper green (for the domes), blue-green, pinkish-red, gold, wall-red, yellow-golden-orange, oriental blue, and verde-antique (a gray-green).

This color scheme was adhered to so closely that pink sand was used to surface the walkways of the Exposition. The sand was originally a white sand taken from Santa Cruz. It was found that this sand turned pink when heated—thus, the pink sand was manufactured. It is to be emphasized that all of this architectural uniformity applies only to the structures erected by the Exposition Company itself. Buildings put up by the individual states, countries, and companies participating in the Exposition varied greatly. These structures will be individually mentioned as we detail what parts of the Exposition lay on or near the alignment.

Starting at the shoreline and moving south to Marina Boulevard

(the Exposition's Esplanade), the California Building was situated on the alignment and the Oregon and New York buildings were located approximately 260 feet to the west.

In its time, the California Building was the largest state building ever erected at an exposition. (Macomber 1915: 171) It had a total area of over 190,000 square feet and was designed in the Spanish style of the old California missions by Thomas H. Burditt. The core structure of this five-acre building lay in the southwest corner of the lot. It was a "U" shape with the open end of the U facing south, and the facade (bottom of the U) at the north. The western wing of the U contained the administrative offices of the Exposition. Together, the two wings enclosed a garden that was designed after the private gardens of the Santa Barbara Mission. (Macomber 1915: 171) The California Building rested on the site of Rudolph Herman's old baths. Some of the shrubbery used in the gardens of the California Building dated back to Herman's time. (R. P. Clark in C. L. Camp and others, 1942: n.p.) The U-shape of the California Building was flanked on the north and east by rows of separate aisles. The aisles contained exhibits sponsored by the 58 California counties. The semitropical garden was situated to the south of the California Building, between it and the Esplanade. The northernmost tip of the Lyon Street alignment will overlie the site of the California Building's facade.

The Hawaiian Building was located east of the Netherlands Building and south (across the Esplanade) from the California Building. At its closest point, it lies about 120 feet south of the alignment. The Hawaiian Building was a small structure done in French Renaissance style. It had a half rotunda that housed a semicircular aquarium containing exotic tropical fish. Parts of the interior were finished in cabinet woods native to the Hawaiian Islands.

Moving eastward along Marina Boulevard, the alignment lies directly over the Exposition's Esplanade. On the north were located the Boat Harbor and the North Gardens. The Boat Harbor had formerly been the turning basin for the Fulton Engineering and Shipbuilding Company and later became a part of the Marina's West Harbor. The North Gardens later became the Marina Green. On the south side of the alignment were

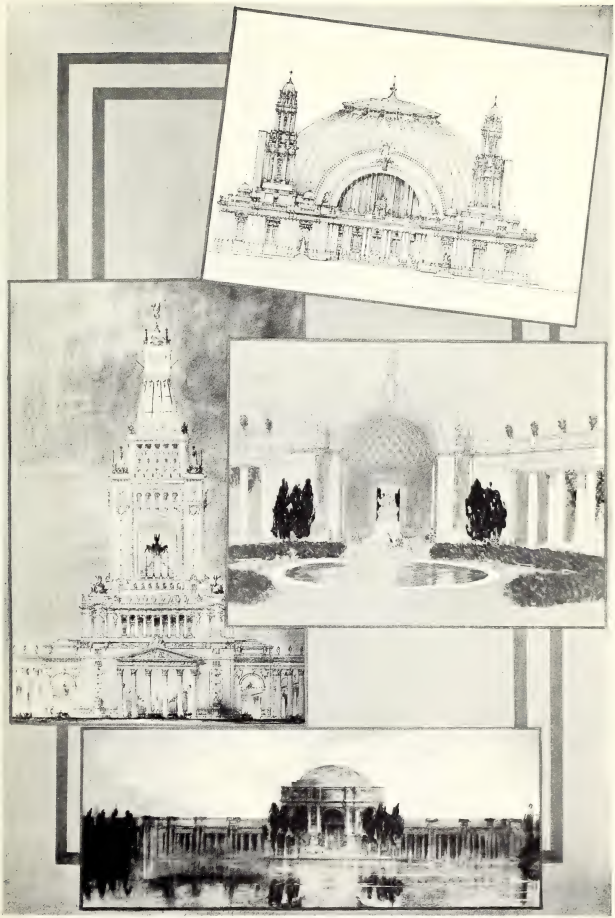


Plate 19: Accepted Designs of Panama-Pacific International Exposition Buildings . . . The top sketch was the Festival Hall by Robert D. Farquhar. The wedding-cake tower below by Carrere and Hastings was the official central motif. But when the lights went out, the lathe and plaster all came down except for the Palace of Fine Arts, designed by Bernard Maybeck, and since restored in more permanent concrete. (Author's collection)

located (west to east) the Palaces of Food Products, Agriculture, Transportation, and Mines and Metallurgy. These were all a part of the "walled city"--i.e., the central group of Exposition Company structures. While all four of these structures differed in their details, their architecture and construction were fundamentally the same (see above).

The Palaces of Food Products and Agriculture both included exhibits of primary agricultural products, but the Food Products exhibits also included manufactured agricultural products. For example, it housed the largest exhibit of tobacco products that had ever been brought together. (Todd 1921: IV, 255) The outer wall of the Palace of Food Products was situated about 30 feet south of the alignment. Its frontage was along the right-of-way of Marina Boulevard between Baker and Broderick Streets.

The Palace of Agriculture was second in size only to the Palace of Machinery (discussed below), measuring 574 by 639 feet in its greatest dimensions. (ibid.) Along with its display of agricultural products, it also housed an exhibit of up-to-date farm machinery. Its frontage lay between Broderick and Divisadero on Tonquin (about 30 feet south of the alignment).

The Palace of Transportation must have been one of the most interesting exhibits on the exposition grounds. It housed a display of railroad locomotives. These were lined up parallel to one another and oriented east-west inside the structure. No doubt many of the visitors to the exhibition must have wondered how these huge locomotives were placed inside the building. In fact, they were brought in under their own power on rails that were located under the temporary floor of the Palace. There was also a switching table under the floor and this was used to help get the locomotives arranged in parallel order along the seven sets of indoor parallel tracks. But, as mentioned, all of this equipment was hidden from the eyes of the spectators. The Palace of Transportation measured 574 x 614 feet and contained a total of 3,348 linear feet of track. (Todd 1921: IV, 228)

The Palace of Mines and Metallurgy was one of the most popular exhibits at the Panama-Pacific International Exposition. Its basement occupied an area of some 10,000 square feet and contained a model mine. The mine included operational equipment, such as a small train that the

visitors could ride into a mock mine tunnel. The Palace of Mines measured 451 x 579.5 feet. (Todd 1921: IV, 196)

Continuing eastward along Marina Boulevard, the alignment passes between the Canadian Pacific Railroad Building (about 90 feet to the north) and the Grand Trunk Pacific Railroad Building (about 90 feet to the south). These two small structures were the only exhibits sponsored by private companies that lie adjacent to the alignment. Just past the Grand Trunk Pacific Railroad exhibit lay the Palace of Machinery.

The Palace of Machinery was the largest building on the Exposition grounds. It was modeled after the Roman baths of Caracalla, and Macomber remarks that it was similar to Penn Station in New York City, even in that both structures were faced with Deniville's imitation travertine. The size of the building, which measured 367 x 967 feet (the area of 369,562 square feet), may best be illustrated by the fact that Lincoln Beachey made the world's first indoor flight inside the Palace of Machinery. (Todd 1921: II, 19) The interior was arranged in three naves. Along with the exhibits of machinery, it also included a series of giant sculptures of allegorical figures related to machinery--e.g., "Electricity." The alignment will pass within about 150 feet of the northeast corner of the Palace of Machinery.

The Palace of Machinery is the last exhibition building that is adjacent to the alignment. Moving farther to the southeast, the alignment passes through the principal freight area of the Exposition and directly overlies the site of the main switching yard. To the north were four warehouses used to store exhibits in transit. The southernmost of these was situated some 10 to 20 feet north of the alignment where it meets the northern margin of Jefferson Street.

At the easternmost portion of the alignment that lies on Exposition grounds (just before crossing into Fort Mason), there was a boat harbor to the north (about 40 feet) and the United Railroad Power Plant to the south (about 90 feet). The boat harbor had separate slips for the ferry from Oakland and for freighters bringing exhibits and materials for the Exposition. The Navy ships **Oregon, Olympia,** and **Solace** were moored in this harbor. The harbor was later known as "Gashouse Cove."

The United Railroad Power Plant lies on property that had previously been owned by the San Francisco Gas Light Company (Block Book 1894: 170-71, lots 253-255) It was later the site of a large power plant owned by the Sierra and San Francisco Power Company, which became the Pacific Gas and Electric Company. (Dow 1973: 97) It appears, then, that "United R. R. Power Plant" was a designation used by the Exposition Company for what was a part of a permanent power station. Under P. G. & E., the plant continued to operate as a substation until it was demolished in 1957.

The end of the Exposition: From an archeological point of view, the destruction of the Exposition is more important than its construction: "The men that built the wondrous city were eager to tear it down. It was a strange phenomenon; they showed the same ardor for destruction that they had shown in creation. But months elapsed during which the engineers had to restrain their impatience while the palaces were emptying and then they attacked it. Where saws and axes were too slow, they tore at it with wire cables and steam power, and when that failed, they shot it down with dynamite. Colonnades were overthrown; domes and towers and pylons, miracles of lovely form, plunged downward into dust, and the dust rose like smoke from the wreckage." (Todd 1921: V, 231) Todd's description of wrecking the Exposition is probably accurate, though somewhat romantic. Nothing today remains of the Exposition buildings except for the reconstructed Palace of Fine Arts.

The Exposition Company made every effort to salvage and sell as much as possible. The steel frames and lumber from the palaces were sold except for small bits of lumber, which were burned. The company succeeded in recovering about 50 percent of the cost for the salvage material, a rather remarkable achievement. (Todd 1921: V, 241) The scrap metal was sent to South San Francisco by rail and the salvageable lumber was stacked east of the Yacht Harbor to await sale.

Transmission lines (underground) had been leased from P. G. & E., and these were "drawn from their underground conduits with the utmost care." Presumably, the conduits themselves were removed; however, sewer

pipe and other pipe were also removed and sold. (ibid., 243, 246)

A few of the private and state Exposition structures survived for a short time. These included a few of the concessions and the Oregon Building, which saw service as a clubhouse for soldiers from the Presidio. Several other state buildings were removed from the site intact. These included the Ohio Building, which went to the San Mateo marshes, where it became a club, and the Wisconsin and Virginia buildings, which were shipped to Marin County.

Because much of the Exposition site was leased from private owners, it was necessary for the company to restore these lands. Restoration consisted of rebuilding streets and sidewalks, removal of "foundation obstructions" (though pilings driven in "various places" remained with the permission of the owners), and filling of lands that "had not been filled up to the terms of the leases when built upon." (ibid., p. 247) The latter process was completed by two means: (1) opening of specific areas to public dumping, and (2) pumping mud over the lands with a suction dredge. All restoration work was complete by January, 1917. It is unfortunate that there are no records as to where pilings were left **in situ** or which lots were filled.

Fill: Possible archaeological material related to the Exposition fill falls into two categories: (1) material associated with the fill installed in preparation for the Exposition, and (2) fill installed after the closing of the Exposition. A portion of the former fill was pumped from the bottom of the bay from a point that was probably never closer than within 300 feet of the shoreline of the 1850's (1884, 1903, and Exposition maps). The chances of this part of the fill containing any archaeological material are negligible. The original provenance of sand mixed with mud from the bay bottom is uncertain, but it is a good guess that it came from an area near Strawberry Island. Chances of this sand containing any historical archaeological material are slight.

The nature of the fill used to level up several of the lots after the Exposition was closed is known, but the precise location of these lots is not known. The fill, if encountered, will consist of either a thin layer

of mud (probably more sterile material from the bay bottom), or refuse dating from after the turn of the century, or both. The latter material could be of interest; however, it is doubtful that any of the post-Exposition fill will be found along the alignment because it transects an area of the grounds where some of the largest (i.e., heaviest) and most elaborate buildings were situated. Therefore, the locale must have been thoroughly filled **prior** to construction.

The chances of encountering structural architectural materials that are **in situ** along the alignment are not great. For the most part, the alignment follows the open walkways of the Exposition. The only notable exception is the site of the California Building, which should be transected by the Lyon Street section of the alignment. It is very doubtful that any remains of this structure will be found. The Exposition company tore down and salvaged as much as it could, but a few pilings were left in place and it is possible that examples of these may be found during construction.

It seems likely that bits of architectural debris overlying the Exposition fill will be found all along the alignment. This debris should consist principally of small bits of Deniville's imitation travertine (stucco) and small construction materials, particularly nails and bolts. Conduits (without cables) may also be found along the alignment. While the easternmost portion of the alignment lies directly under the Exposition switching yard, it seems certain that all of the rails were removed and sold after the Exposition closed.

Harbor View after the Exposition . . . Historical Outline: By 1917, most of the lands occupied by the Exposition had been returned to the lessors. The site of the Palace of Fine Arts had belonged to the Presidio but it was traded to the city by the Army in exchange for the right to maintain a railway along the north side of Marina Boulevard from Fort Mason to the Presidio. This exchange of property did not take place until 1927. (Dow 1973: 103)

In 1921, the San Francisco Board of Supervisors purchased four blocks of land north of Tonquin Street. Its idea was to develop a bay-side

city park. The legislature assisted by granting 12 additional blocks of land (between Lyon and Steiner north of Marina Boulevard) to the city, which then placed all of the property in the control of the San Francisco Park Commissioners. The commissioners recognized the potential of the Exposition's boat harbor (previously the turning basin for the Fulton Engineering and Shipbuilding Company) and improved it between 1925 and 1927. Improvements consisted of extending the breakwater and dredging and enlarging the harbor. (ibid., p. 105) Enlarging the harbor entailed removing the Exposition's fill from the block bounded by Baker and Broderick Streets (part of the site of the California Building). Finally, a 400-foot earth-fill pier was placed at the foot of Scott Street.

In the meantime, real estate developers were drawing up plans to construct a residential area to the south of Marina Boulevard. The development was to be called "Marina Gardens," but most of the plan did not materialize. "Instead of beautiful homes surrounded by spacious gardens, multiple dwellings were built, and single dwellings were pushed together on lots with twenty-five foot frontages." (Dow 1973: 107)

The sale of Marina Gardens land began in 1924 and all of the property was sold within a short time. The residential area that exists south of the Marina Boulevard at this time is the end result. The unconforming layout of the streets bounded by Scott and Fillmore north of Chestnut Street is a vestige of the original Marina Garden plan.

The area to the north of Marina Boulevard continued to be improved during the 1930's. In 1934, a new seawall was constructed at the Yacht Harbor as a part of the W.P.A. program. Twenty years later, the Park Commission (now the Recreation and Parks Department) extended the breakwater eastward to the docks at Fort Mason in an effort to increase berthing space. The seawall was never finished, however, and the portion which was built caused shoaling inside the harbor west of its entrance. (ibid., p. 110) In 1958, the entrance to the harbor was moved in order to remedy the shoaling problem. In the 1960's, the breakwater was widened.

The latest development to take place north of Marina Boulevard was the construction of Gashouse Cove (San Francisco had purchased the property from P. G. & E. in 1939). The Gashouse Cove Marina was

completed in 1962 and accommodated 109 small boats. Construction included "a modern concrete retaining wall, or breakwater, supported by gunite-jacketed timber piles, a parking lot, and floating boat slips. (Dow 1973: 112)

The Fill: Fill was added in a number of places north of Marina Boulevard after the Exposition, but all of this activity was related to improvements in harbor facilities. The pier at the end of Scott Street was made from fill, much of which probably came from dredging the harbor. The extension added to the breakwater in the 1930's was also constructed from fill (though the original section was constructed from cobblestones). This fill was supplied by construction companies that were permitted to simply dump wreckage from destroyed buildings off the pier at Scott Street. The same system was used when the breakwater was widened during the 1960's. Dow has examined the nature of this fill: "In it [the fill] can be found parts of sidewalks, concrete buildings from the Western Addition Redevelopment Area, and part of the old French Hospital, as well as tombstones from Laurel Hill Cemeteries." (1973: 111)

Finally, the storm drain outfall located at the foot of Laguna Street was covered using fill. Once again, the fill was supplied by construction companies that used the site to dump wreckage from buildings that they had torn down.

Features along the Alignment: The alignment will not encounter any buildings dating from the period following the Exposition to the present. However, the entire stretch along the north side of Marina Boulevard lies directly over the railroad that the army maintains between Fort Mason and the Presidio. As mentioned earlier, this property was obtained through a trade with the City of San Francisco. The original tracks had been laid by the Panama Pacific International Exposition Company for moving various exhibits around on its grounds.

Modern residences that cannot date from earlier than the late 1920's line the southern side of Marina Boulevard. The Yacht Harbor, Marina Green, and Gashouse Cove lie to the north. Construction along the

alignment will have no effect on these.

The tracks of the Army's Presidio-Fort Mason railway will have to be removed. These are the only surface features other than paving that are visible along the alignment at present.

Archaeological material dating from the post-Exposition period may well be found during the course of construction. This will probably consist of scattered debris from the various filling and construction activities related to the development of the Yacht Harbor. This debris may include some of the cobblestones used in constructing the W.P.A.'s seawall in the 1930's. These cobblestones were taken from San Francisco streets that were being prepared for paving. Dow says (1973: 109) that they originally came to San Francisco as ballast on sailing ships in the late 1800's. However, Mrs. Nelson, owner of a quarry near Fairfield, claims that most of this stone came from her property (personal interview).

Other late debris found along the alignment will consist of wreckage from buildings. Some of this late "dumping" fill will be transected by the alignment at the point where it passes over the outfall at the foot of Laguna Street. It is important that this material not be confused with 1906 earthquake debris or with debris from the Exposition. It should be possible to distinguish the earthquake debris because this material should show signs of burning. Exposition debris, on the other hand, should include fragments of the imitation travertine stucco used so extensively for facing Exposition buildings.

Intersection of Broderick and Marina (Tonquin), Section H on 1877 Map 3: The segment of the N-4 alignment for discussion here is at the intersection of Broderick and the Marina Boulevard, or Tonquin Street as it was shown on early maps. The alignment is 9 feet wide at the inside of the box sewer and the excavation drops to -13 feet at Baker Street to the west and -15 and 1/2 at Divisadero to the east. We are concerned with a portion running 200 feet on either side of Broderick along the line of Marina Boulevard. This segment crosses the natural shoreline (see Map 3) in 1877 at the intersection. Our 1893 Sanborn Map LL shows some fill in the **Fulton Engineering and Ship Building Works** extending 200 feet

Plate 20: The Fulton Engineering and Shipbuilding Works in 1897 . . . This view of the fitting-out basin shows the materials of Fair's seawall in the left foreground. The N-4 alignment parallels this segment of the seawall, running along the line of the marine railway occupied by the gas schooner visible beyond the spanking new steam schooner **Samoa.** (S. F. Maritime Museum)

from the center line of Broderick Street. As can be seen from Map LL, the alignment passes through the works between the machine shop and the pattern-making storage building directly along the marine railway and through the turning basin.

In 1892, surveyors were running lines on this site for the new Fulton Iron and Shipbuilding Works and preparing to lay the foundations of four large buildings. The molding, machine, pattern, and boiler shops were the first buildings erected on the eighteen acres purchased from James G. Fair in 1890. The officers of the corporation were D. B. Hinkley, James Piers, Daniel E. Hayes, James G. Fair, F. A. Huntington, Henry Christie, and Richard D. Chandler. (**Examiner**, October 11, 1892)

Plate 20 gives us an idea of what the Fulton Shipbuilding Works looked like in 1897, when the **Samoa**, a steam schooner, was being built. In this plate the **Samoa** is almost ready to put to sea. To the right of the **Samoa** you can see the marine railway with a schooner drawn up for repair. The alignment runs along these ways next to the pattern shop on the left. A portion of "Fair's Seawall" is at the left.

Soundings from the 1877 manuscript map indicate that there was comparatively deep water in this basin--12 to 15 feet or more. This would put the bottom of the bay mud below the N-4 alignment in this basin. However, the alignment would cross the point of the beach as shown in 1893 Map LL and again across the 1877 shoreline as shown in Map 3 at the intersection of Marina Boulevard and Broderick Street.

The Fulton Engineering and Shipbuilding Works operated on this site from 1893 until 1908. Some ships were built entirely at these yards, others outfitted with engines, and still other, larger ships were repaired at these shops. Howard Livingston recalls, "I went to work for the Fulton Iron Works in 1906, and the plant was still using the same machine tools and manufacturing methods that were used in building the engine of the **Hermosa** twenty-six years before . . . [he describes the various boring mills, planers, slotters, lathes, and drills]. . . . All of the tools in the boiler shop, machine, and pattern shop were belt-driven, by a system of shafts and belts, by a Corliss steam engine. The cutting tools were all of carbon steel, because the old machine tools could not stand the strain

of the recently developed high speed tool steel. The machine shop was served by three jib cranes. At the time I went to work the construction of two triple expansion and one compound engine was just starting. These engines, when completed, were installed in the steam schooners **Yosemite** and **Shna-yak** and the tugboat **Restless**. . . . the Fulton Iron Works was located on a sand spit that jutted out into San Francisco Bay at Harbor View . . . the completion of the seawall (now the north boundary of the Marina District) and a small jetty in 1898 gave the plant a protected fitting-out basin. The drawback of this isolated location was that all material had to be trucked clear across San Francisco at a time before the streets were paved, or else loaded onto barges on the waterfront and towed up to the plant. The fitting-out basin kept filling up with sand. At intervals a Red Stack tugboat would be tied up to the wharf with her stern to the shore and her engine opened up to full speed. This would push the sand away from the dock and onto the shore. Scow schooners would load the sand and deliver it to dealers of building materials. This would not settle the problem permanently, so when too much sand had accumulated a dredger would be brought in to deepen the basin. In 1898 the Alaska gold rush and the Spanish-American War brought so much work to the Fulton that two shifts of workmen were required and the plant could absorb its high overhead. At this time a new dock was built, a new Corliss engine was installed to replace four small engines that had previously powered the shops and a new boiler plant for the Corliss engine. The Fulton did a very good grade of work. It built the engines for a number of tugboats, steam schooners and ferry boats, as well as a variety of other machinery. However, after 1900 the business of the company gradually declined and after the iron trades strike of 1907 it opened up on part-time basis until it closed down in 1908. . . . The factors that forced Fulton to go out of business can be summed up as follows: its isolation resulted in high transportation costs [the plant's founders had planned to use the Belt Line Railroad as a means of avoiding these costs but this did not materialize]; the plant was allowed to deteriorate . . . kept its obsolete tools and methods, there wasn't enough work to pay for the outfitting-basin upkeep, sticking to belt drive for its machine tools

instead of changing to individual motor drive, and keeping up a steam plant instead of changing over to purchased power." (Livingston ms. 1969)

To his description of the Fulton Engineering and Shipbuilding Works, Livingston has attached a map showing the area in 1906. At that time a brick plant had replaced some of the shops, saloons, and dwellings on Block 1185 bounded by Tonquin on the north and Broderick on the west. Fishermen's shacks and wharves followed the shoreline down along Beach Street, North Point, and Bay. To the south in a "low area" yet to be brought up to street grade, the Chinese had planted vegetable gardens between Broderick and Steiner in the general vicinity of Francisco, Chestnut, and Lombard. The Harbor View recreation area was still in operation—it dated back to 1862--and there was a shed on Jefferson Street between Baker and Lyon to house two steam locomotives for the Baker Street carline. (Livingston ms. 1969)

CONCLUSIONS AND RECOMMENDATIONS FOR ARCHAEOLOGICAL TESTING AND MONITORING OF THE CULTURAL RESOURCES IN THE N-2, N-1 AND N-4 CONTRACT AREAS

During the past several months, intensive archival research concerning those parts of San Francisco's North Shore on or near the N-2, N-1 and N-4 alignments has allowed the authors to develop a comprehensive familiarity with the history of North Beach, Fort Mason and the Marina District respectively. Since these areas grew and developed primarily during the last century, our research efforts were furthered by the fact that considerable quantities of historical documentation exist in the literature concerning these areas. Such evidence, particularly in the form of old photographs, proved invaluable to our task of constructing an in-depth understanding of the montage of human events and activities which have transpired throughout northern San Francisco since the middle of the nineteenth century. Among other things, our studies have enabled us to become acquainted with those structures that existed on or near the N-2, N-1 and N-4 alignments during the last hundred years or so, as well as the various uses to which they were put by their builders and occupants.

Our research has convinced us that there is little chance of encountering any cultural materials from the prehistoric period (ca. 2000 B.C. - 1776 A.D.) on or near the N-2, N-1 or N-4 alignments. Most of the land through which these alignments run was submerged beneath the waters of the San Francisco Bay during the entirety of the prehistoric era. However, unlike the situation that exists in regard to a number of

the contract alignments within the North Shore and Channel Outfalls, there is at least a physical possibility of encountering prehistoric material in northern San Francisco, since the original shoreline is transected by the sewer route in three separate locations between the Kearny Street Pumping Station and the Baker Street Outfall Facility. While no archaeological sites of prehistoric age have been recorded on or near the three North Shore alignments in question, one cannot rule out the possibility of their existence in these places on the basis of archival research alone.

The same situation holds true for human activities along San Francisco's north shore dating from the Spanish, Mexican or Early American periods. Our research has led us to the conclusion that there is little likelihood of encountering artifactual traces dating from these periods on or near the N-2, N-1 or N-4 alignments. Yet, in a number of places along these alignments, there is a physical possibility of encountering such artifactual traces and, as our knowledge of San Francisco's history during these early times is far from complete in every detail, such a possibility cannot be dismissed out of hand on the basis of archival research alone.

The beginning of the gold rush marked a dramatic increase in the pace of human activities in the North Beach area. However, as we have seen, there are a number of factors which combine to decrease the possibility of the N-2 alignment encountering significant concentrations of well preserved cultural materials which date from the 1850's or early 1860's. Harbor View, the modern Marina District (N-4), was not reclaimed from the waters of the bay and settled for several decades following the gold rush. Therefore, there is virtually no chance of encountering concentrations of cultural materials from this period along the N-4 alignment.

There can be little doubt that artifactual materials dating from the late nineteenth century or the early years of the present century will be encountered along the N-2 alignment. The amount and stratigraphic significance of such material remains a question, but it does not appear likely that much of the material that will be encountered along the N-2 alignment will further the efforts of archaeologists and historians to add

to the present store of knowledge that exists with regard to the development of San Francisco in general and the North Shore in particular. An idea of the type of cultural material most likely to be encountered along the N-2 alignment can be gleaned from Dames and Moore's 1975 report entitled **Slurry Tunnel Subsurface Investigation-North Shore Outfalls Consolidation Project.** This report is based on a number of test borings placed along the N-2 alignment in which cultural materials were encountered which date back to the late nineteenth century and/or early twentieth century.

As we have seen, there is even less possibility of encountering concentrations of cultural materials along the N-4 alignment. The modern Marina District was not filled until the last decades of the nineteenth century and most of the fill is almost certainly devoid of artifactual materials. However, as there is always a possibility, no matter how small, of encountering rare or unexpected finds whose presence cannot be accounted for by any amount of painstaking archival research, adequate pre-construction testing and monitoring procedures must be devised so that the building of the North Shore Outfalls Consolidation Project will not adversely impact cultural resources that may exist within the N-2, N-1, N-4 alignments of that project.

Pre-Construction Archaeological Testing Procedures: While we believe that the possibility of encountering significant cultural resources along the N-2, N-1 or N-4 alignments is not great, there are a number of localities along these alignments which, on the basis of archival research, appear the most likely to contain artifactual materials. If any significant cultural materials exist along the N-2, N-1 or N-4 alignments, they will almost certainly be situated in the places designated below. Therefore, we recommend that a program of archaeological testing be undertaken along the N-2, N-1 and N-4 alignments before the advent of construction activities. It is our opinion that a series of carefully selected and placed mechanical exploratory borings at spots along the alignments which we have determined to be of the most potential significance would adequately determine the presence as well as the nature of any cultural remains which might exist along the above mentioned sewer routes.

We propose that 20 mechanical test borings, each with a minimum diameter of 12 inches, be placed along the N-2, N-1 and N-4 alignments by a qualified Historical Archaeologist selected and retained by the City and County of San Francisco. This individual (hereafter referred to as the Principal Investigator) shall have the responsibilitiy of selecting the exact locations of the borings as well as the precise number of borings to be placed at each site which has been selected. The Principal Investigator shall monitor the implementation of the borings and, with the assistance of one or more qualified persons whom he may retain, shall undertake the responsibility of collecting the samples of cultural materials unearthed by the borings and of transporting them to an appropriate location for analysis and storage. The Principal Investigator shall, within 30 working days of the completion of the laboratory analysis of the material unearthed by the borings, produce a written report which describes any findings made and which interprets the significance of said material and offer recommendations for additional archaeological procedures to be conducted along the alignment(s) under discussion. If, in the opinion of the Principal Investigator, the evidence produced by the first set of 20 mechanical borings indicates a need for further archaeological testing, an additional eight (8) borings of a minimum diameter of 24 inches shall be held in reserve to be placed in locations designated by the Principal Investigator. In the event that any or all of these reserve borings are authorized and utilized, the Principal Investigator shall be required to conform to the same set of procedural responsibilities he followed in the direction of the initial set of mechanical exploratory borings: namely, the monitoring of the placement of the borings and, with the aid of one or more qualified assistants, the transportation of any cultural materials collected to an appropriate location for analysis and storage, and the production of a written report detailing any findings that have been made within fifteen working days of the completion of the laboratory analysis conducted in connection with the cultural material unearthed by the borings.

On the basis of our present knowledge acquired through archival studies, the following locations appear to be the most likely to yield

potentially significant cultural materials along the N-2, N-1 and N-4 alignments. (1) There will be an open-cut excavation on North Point Street near the Kearny Street Pumping Station. From archaeological test borings already placed at the site of the Kearny Street Pumping Station, it is known that considerable quantities of late nineteenth century artifacts were deposited in the area. Therefore, it is proposed that four mechanical test borings be placed along that portion of the N-2 alignment connecting the Kearny Street Pumping Station to the North Point slurry tunnel to identify the type and amount of cultural material that may be deposited there. (2) There will be an open-cut excavation along Stockton Street from North Point to Beach Streets. As archival research has indicated a possibility of cultural materials being encountered along this part of the N-2 alignment, it is proposed that two mechanical test borings be placed within the confines of the prospective open-cut excavation at the above mentioned location. (3) There will be an open-cut excavation at the intersection of North Point and Powell Streets. As archival research has indicated a possibility of cultural materials being encountered along this portion of the N-2 alignment, it is proposed that two mechanical test borings be placed within the confines of the prospective open-cut excavation at the above mentioned location. (4) There will be an open-cut excavation at the intersection of North Point and Mason Streets. As archival research has indicated a possibility of cultural materials being encountered along this portion of the N-2 alignment, it is proposed that two mechanical test borings be placed within the confines of the prospective open-cut excavation at the above mentioned location. (5) There will be an open-cut excavation at the intersection of North Point and Taylor Streets. As archival research has indicated a possibility of cultural materials being encountered along this portion of the N-2 alignment, it is proposed that two mechanical test borings be placed within the confines of the prospective open-cut excavation at the above mentioned location. (6) There will be an open-cut excavation at the intersection of North Point and Leavenworth Streets. This location is one of the three spots within the North Shore Outfalls where the original shoreline is transected by one of the sewer alignments. It is therefore

possible that artifacts from the prehistoric, Spanish, Mexican, or early American periods exist at this location. There is also a possibility that the N-2 alignment will encounter cultural materials from the late nineteenth century at North Point and Leavenworth Streets. Therefore, it is recommended that two mechanical test borings be placed within the confines of the prospective open-cut excavation at this location. (7) The sewer line again transects the original shoreline on that stretch of land that runs between the western portal of the Fort Mason tunnel (N-1) and the intersection of Marina Boulevard and Buchanan Streets on the N-4 alignment. As prehistoric or early historic period artifacts could possibly be encountered along this portion of the alignment, it is proposed that three mechanical test borings be placed here; one at the west portal of the Fort Mason tunnel, one on Marina Boulevard about midway between the above mentioned location and the intersection of Marina Boulevard and Buchanan Streets, and one on or near the intersection of Marina Boulevard and Buchanan Streets. (8) The original shoreline is once again transected by the N-4 alignment along Marina Boulevard from Broderick Street to Lyon and then north on Lyon to the Baker Street outfall facility. Again, there exists the possibility that the N-4 alignment will encounter some cultural materials from the prehistoric, Spanish, Mexican, early American, or later periods. Although this is not a likely possibility, it is proposed that three mechanical test borings be placed along this portion of the N-4 alignment at evenly spaced intervals.

We believe that with the implementation of these archaeological testing procedures and concomitant analysis and reporting of any cultural materials that are encountered, an adequate program of pre-construction testing shall have been undertaken with regard to the detection of cultural materials along the N-2, N-1 and N-4 alignments. With the results of this testing program in hand, it will be possible to devise a scheme that will mitigate the adverse impact to cultural materials along the above mentioned alignments by the construction of the North Shore Outfalls Consolidation Project.

The procedures for archaeological monitoring during the course of construction for the N-2, N-1 and N-4 alignments are identical to those outlined in the C-2, or King Street area, section of this report.

Appendix

Building Fair's Seawall and Filling In the Marina, 1893 . . . Howard Livingston Recalls Cutting Down the Sand Hills and Filling In the Marina, the Construction of Fair's Seawall and the Gas Company Wharf.

In 1893, my father's employers, the contracting firm of Warren and Malley, were awarded the contract to cut down some sand hills using the material for filling in a submerged area, now known as the Marina. The sand hills extended west from Van Ness Avenue to Webster Street, and from Lombard Street north to Bay from Webster to Laguna, and from Laguna east into the Fort Mason Reservation. [See Plate 3 for an early 1856 view of these immense dunes.] This submerged area covered twenty-eight city blocks owned by the Fair Estate.

In accordance with the practice of construction companies of the time, the first piece of work was to build a camp to house and feed their employees. As most of the men were single, and accommodations in the immediate vicinity were limited, most of them lived at the camp. The camp was on Bay Street. It covered most of the two blocks that straddled Laguna Street. [One block south of the San Francisco Gas Works.]

The first time I was ever down to the beach, after our moving to this part of San Francisco in 1893, the shore line started from a rocky point, the most northerly point of the Fort Mason Reservation. It curved to what is now the north side of Bay Street at Fillmore. From here a bulkhead had been built for two blocks to Pierce Street, and then south for one block to Francisco Street. Except for a saloon called the "Crab House" the two blocks in back of the bulkhead was occupied by a gas plant. Another gas plant [The San Francisco Gas Company] occupied the entire block on Bay Street east of Buchanan, and a strip half of a block wide west of Buchanan from Bay Street to Beach. The gas company was

at this time extending this street west of Buchanan from Bay Street to the beach to align with what is now Marina Boulevard. A retaining wall was being built with rock brought to this site on barges and unloaded by a derrick barge around the three sides of this area. When the wall was completed, the interior was filled with earth and surfaced with a hard paving. At the outer end on the east side, a coal unloading dock was built. [Sanborn Map MM] This dock was also used by the small tankship **George Loomis** which occasionally discharged a cargo of oil. The beach between the gas company mole and Black Point was clean. Being to leeward of the mole, the water was smooth. For many years this beach was a favorite place for outings and swimming. To the west, the beach was fouled by tar from the gas plants and refuse from Lully's Soap Works.

I remember a pile trestle was being built along the North line of what is now the Marina, from Webster to Divisadero Street. At Scott Street, the trestle made a T for one block, and went one block west, and then south until it intersected the shoreline. A railroad track was laid on this trestle.

In line with Fillmore Street, a camp on piling was built for the workmen building the seawall ["Fair's Seawall"] and a car slip for unloading dump cars loaded with rock. One hoisting engine was set up at the car slip to pull the cars off the barges. A number of other hoisting engines were set up at intervals to pull the cars along the trestle to the point where they were to be dumped. When the seawall along the north boundary of the Marina was completed, the trestle was continued along the line of Webster Street to shore. A new car slip was then built on the east side of this trestle and the car barges landed there. The seawall camp was closed and the men moved to the camp on Bay Street, as they could now walk onto the seawall.

It was impossible to schedule the time at which a car barge would dock, so work started at whatever time of the day or night the barge arrived, and continued until all of the rock had been dumped. The tugboat then towed the barge back to the San Bruno quarry car slip for another load. The part of the bay enclosed at the west end of the seawall was used as the fitting-out basin for the Fulton Iron Works and is now the

yatch harbor.

When the last row of piles was driven at the west end of the seawall it was impossible for the gas company to bring coal barges to its unloading dock. After the pile driver was taken away, during the noon hour when all the construction company's workmen were at the camp for their noon meal, the gas company towed in a pile driver of their own and started pulling up the piles. As soon as the word reached camp, the superintendent brought a number of his men to the spot, took them out in skiffs and had a man sit on top of each pile. It was impossible to pull up the piles without injuring the men, so the gas company withdraw its pile driver. The construction company moved in its derrick barge, **Tamalpais**, and a car barge to close the gap. the **Tamalpais** had an electric light plant. A powerful arc lamp was suspended from its boom over the trestle and day and night watch was maintained to prevent another attempt to pull up any more piles. The watchmen had loaded rifles.

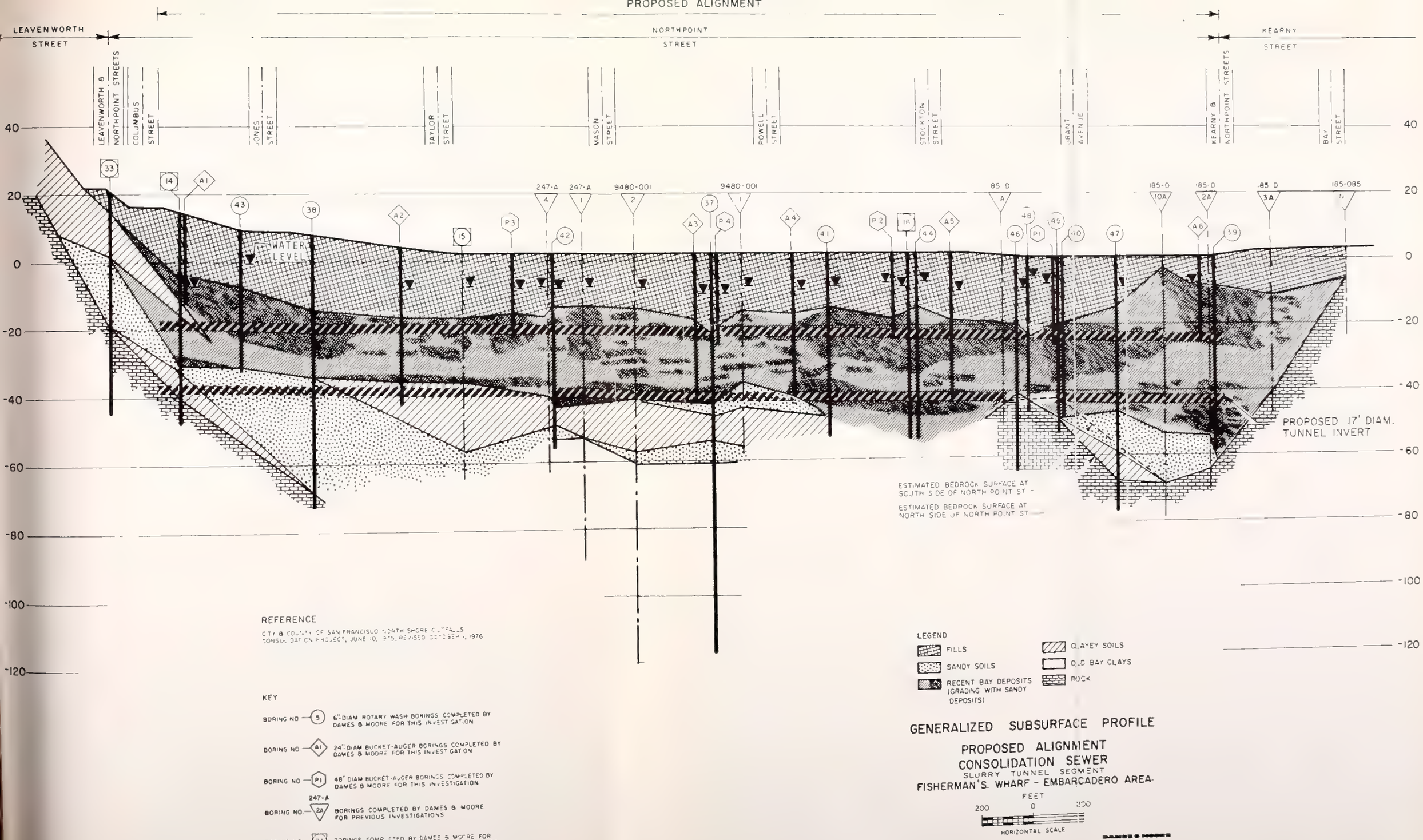
There was no further trouble on the job. The case was taken into court and a decision was rendered in favor of the construction company. From this time on the gas company unloaded its coal at the dock of the other gas company at the foot of Buchanan Street, and hauled it to their plant in dump trucks. Later on, a consolidation of all the gas companies into the Pacific Gas and Electric Company resulted in the abandonment of the western of the two gas plants. The San Francisco newspapers wrote the affair up as "The only naval battle to take place on San Francisco Bay."

To remove the sand hills, the contractors built three endless-chain buckets, elevator type excavators, steam driven. Two-foot gauge railroad tracks were laid from the excavators to the dumping grounds. Six car trains of small dump cars, horse drawn, hauled the sand from the excavators. The first filling was on the low area west of Fillmore Street, after which the filling was done along the shore line, pushing it out into the Bay to the north.

For some reason, some parts of the low area were not filled in until a number of years later. The unfilled areas were used by the

Chinese gardeners for raising vegetables. There was fresh water close to the surface. A plank line well was sunk with steps leading down to the water. A Chinese, with two five-gallon oil cans slung from the ends of a pole balanced across his shoulders, would fill the cans at the well and carry them out to the vegetable beds. Other Chinese would work the beds, while still others would peddle the vegetables carried in baskets also slung in pairs from a pole. After the Chinese gave up the vegetable bed, the low spaces became neighborhood dumps until finally filled in. [Livingston's Ms. map of this area shows the Chinese gardens to be between Broderick and Steiner, and Bay and Lombard, over five blocks south of the alignment.]

After the completion of the seawall, filling was discontinued along the south shore. Tracks were laid along the inner side of the seawall, and the sand cars were run along these tracks and dumped . . . The company also had a number of small excavating jobs. The material from these jobs was also used for filling in the pond. It was hauled by horse drawn dump wagons, of a type known as sand hacks. In San Francisco, some areas were on sand hills, and some on red clay. Sometimes the earth being excavated was rich loam. Someone wanting a lawn would pay to have the top layer of sand or clay stripped and hauled away, and replaced with loam. Working under such conditions, a contracting firm could frequently be paid two or three times for the same job through being paid for excavating on one job and for using the excavated material to fill another. With so many horses, a contractor's camp always had a large manure pile. This was also a source of revenue for spreading it on sand stopped the sand from drifting. The first rain cause grain in it to sprout, and this rank growth made an excellent cover crop."



REFERENCE

CITY & COUNTY OF SAN FRANCISCO NORTH SHORE OUTFALLS CONSOLIDATION PROJECT, JUNE 30, 1975, REVISED DECEMBER 1, 1976

KEY

BORING NO — (5) 6"-DIAM. ROTARY WASH BORINGS COMPLETED BY DAMES & MOORE FOR THIS INVESTIGATION

BORING NO — (A1) 24"-DIAM. BUCKET-AUGER BORINGS COMPLETED BY DAMES & MOORE FOR THIS INVESTIGATION

BORING NO — (P1) 48"-DIAM. BUCKET-AUGER BORINGS COMPLETED BY DAMES & MOORE FOR THIS INVESTIGATION

BORING NO. — 247-A / 2A BORINGS COMPLETED BY DAMES & MOORE FOR PREVIOUS INVESTIGATIONS

BORING NO. — (23) BORINGS COMPLETED BY DAMES & MOORE FOR N50C PROJECT INVESTIGATION - DAMES & MOORE JOB NO. 0165-1091

LEGEND

- FILLS
- SANDY SOILS
- RECENT BAY DEPOSITS (GRADING WITH SANDY DEPOSITS)
- CLAYEY SOILS
- OLD BAY CLAYS
- ROCK

GENERALIZED SUBSURFACE PROFILE

PROPOSED ALIGNMENT CONSOLIDATION SEWER

SLURRY TUNNEL SEGMENT

FISHERMAN'S WHARF - EMBARCADERO AREA

FEET

200 0 200

HORIZONTAL SCALE

DAMES & MOORE

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Chronicle refers to the **San Francisco Chronicle**

Examiner refers to the **San Francisco Examiner**

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Respectfully
J.E. Hilgard
Assist. Coast Survey
In charge of Office

G O L D

Mile Rocks

Point
Lobos

Seal Rocks

Cliff House

...waterfront along the north Embarcadero
... in the 1850's. The scene at the Green Street Wharf,
... C. V. Lawes. (S.F. Maritime Museum)

Presidio
Heights

1909 8